DOCUMENT RESUME

ED 098 106 SO 007 878

TITLE	Soviet Commitment to Education. Report of the First Official U.S. Education Mission to the U.S.S.R.
INSTITUTION	Office of Education (DHEW), Washington, D.C.
PUB DATE	59
NOTE	147p.; Out of Print
EDRS PRICE	MF-$0.75 HC-$6.60 PLUS POSTAGE
DESCRIPTORS	Art Education; Cocurricular Activities; *Comparative Education; Curriculum Study Centers; Early Childhood Education; *Educational Administration; Educational History; *Exchange Programs; General Education; Higher Education; Professional Education; *School Role; *Socialization; Teacher Education; Vocational Education
IDENTIFIERS	*Union of Soviet Socialist Republics; USSR

ABSTRACT

The Soviet view of education as a chief resource for achieving national, social, economic, cultural, and scientific objectives is reflected in this report of the first U.S. mission to the U.S.S.R. The following topics are covered: The Administrative System of Soviet Education, Nurseries and Kindergartens, Schools of General Education, Extraschool Activities, Education for the Arts, Preparation of Workers, Teacher Education, Academy of Pedagogical Sciences, Higher Education, and The Academy of Sciences. The report does not compare Soviet and U.S. schools because of the vast difference in objectives: theirs to educate citizens to serve the needs of the state; ours to equip students to be productive free individuals. Favorable impressions gained by the mission members include the growth and development of nurseries and kindergartens, dignity and respect between boys and girls, cooperation of industry with schools, and an emphasis on foreign language instruction. Less favorably noted are the lack of emphasis in the humanities, lack of instruction on other economic systems and societies, and other aspects of their uniform society. An appendix includes the studies required for various specialities at the Pedagogical Institutes and "Soviet Educational Reorganization for 1959-1963." (JH)

ED 098106

OE-14062

Soviet Commitment to Education

Report of the First Official
U.S. Education Mission to the U.S.S.R.

with an analysis of recent educational reforms

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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SP 007 878

BULLETIN 1959 NO. 16

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE . Abraham A. Ribicoff, Secretary
Office of Education . . . . Sterling M. McMurrin, Commissioner

In the preparation of this report William K. Medlin, specialist for Eastern Europe in the Office of Education, served as consultant on some technical matters including the translations of Russian terminology into English.

Printed August 1959
Reprinted October 1959
Reprinted 1961

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1961

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington 25, D.C. - Price 70 cents

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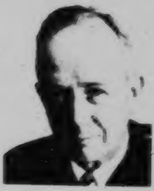

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Foreword

THIS IS A BRIEF report on the observations of the first official United States education mission to the U.S.S.R. The first mission was made possible by an Exchange Agreement negotiated by the U.S. Department of State and signed on January 27, 1958. The agreement authorizes exchanges in cultural, technical, and educational fields to promote mutual understanding between the people of the United States and the Soviet Union.

As members of the first exchange group, we spent one month, from May 8 to June 6, 1958, in the U.S.S.R. While there we conferred with Soviet educators and visited approximately 100 schools and other educational institutions. Our visit was returned by a group of nine Soviet educators in November and December 1958.

Since the agreement was made there have been a number of other missions, and hundreds of books and pamphlets have been exchanged between the two countries. Most of the American books sent to the U.S.S.R. were donated by the American Textbook Publishers Institute and various educational associations.

It is to be hoped that these exchanges have opened the door to a better understanding between the people of the U.S.A. and the U.S.S.R.

Our mission had two main purposes: To lay the foundation for productive cultural relations between the education agencies and institutions of the U.S.S.R. and the U.S.A. and to secure first-hand information on the operation and accomplishments of Soviet schools.

In a chartered plane, we traveled as a team for 7,000 miles, from Belorussia to the Urals, from the Chinese border to the Black and Baltic Seas. And we visited eight of the principal cities: Moscow; Kazan, the capital of the Tatar Republic; Sverdlovsk, the Pittsburgh of the Urals in Siberia; Alma-Ata; Tashkent; Sochi, a workers' center on the Black Sea for rest, recreation, and treatment; Minsk, the capital of the Belorussian Republic; and Leningrad. The U.S. Department of State had suggested that a film be made of our tour in the U.S.S.R. and of the

Soviet educators' return visit. The Soviet Government agreed and a Soviet photographic team of nine members accompanied us and filmed our activities.

In the towns and cities we broke up into smaller groups, first because in that way we were able to obtain a more comprehensive view of Soviet education and, second, because of the different interests of the various members. We were given a friendly reception in all places, and often men and women on the streets, in the theatres, and elsewhere gathered around us with questions and messages of good will.

We have frequently been asked, as everyone is who returns from the U.S.S.R.: "Didn't you see only the places and the things they wanted you to see?"

Naturally, we visited a number of institutions that are the showplaces—certain monumental cultural and political spots or institutions of national or local importance such as art museums, the Kremlin, theatres, the Industrial and Agricultural Exhibition in Moscow, but through the cooperation of our host, the Ministry of Education of the Russian Soviet Federated Socialist Republic (RSFSR), we did get off the main tourist track in our 7,000-mile swing.

Did we see what was really going on? We believe we did, at least in education. Visiting schools and colleges and conferring with Soviet educators were similar to such experiences in the U.S. except for the language barrier. Teachers and school people have many common problems the world over. We felt quite at home discussing some of the problems educators face everywhere.

We had interviews and conferences with education officials and visited all types and levels of educational and cultural institutions; as individuals and as a group we had many illuminating contacts with Soviet society. Soviet educators seemed generally frank in answering our questions. They gave us the impression they realized that they still have a long way to go to achieve their own standards, but they are proud of their achievements and confident about eventually reaching the goals they have set.

In seeking first-hand information about Soviet education we focused our attention on three central education programs: The general education (10-year) school; teacher education for the general school; and technical education. We were, of course, also interested in and observed other phases of education, but because our time was limited we had to concentrate on our primary interests. In presenting our observations we therefore discuss the first three programs in greater detail, but to round out the picture we summarize our observations on other phases of education.

By no means have we been unmindful of the educational ferment in the U.S.S.R.; we were constantly reminded of it during our visit. In response to our inquiries about the first Khrushchev speech on educational reforms, we were told by Yevgeni Afanasenko, the RSFSR Minister of Education, that he was glad to note that we were reading the speeches. Seemingly there is an inclination to minimize the revolutionary possibilities in these proposals. Since our return, of course, there have been additional proposals and further clarification, though the pattern for the future is by no means clear. (See Appendix B for an analysis of the new reforms.)

We caution the reader not to make broad and conclusive generalizations on the basis of the observations we report. The Soviet Union and Soviet education are very large entities and, as we have noted, the situation is indeed in a state of transition. We are striving in this report to contribute to the reader's understanding of the background of present Soviet education so that he may be in a better position to interpret future developments. We are convinced that it is important for the American people to examine the Soviet program closely and to keep up to date on the developments and trends in Soviet education.

We make no effort to compare the schools of the United States with those of the U.S.S.R., for we must measure the progress of each by its own separate goals. But we do emphasize that, whether we like it or not, competition has been imposed upon us by a nation of vast resources, a people of seemingly unbounded enthusiasm for self-development, governed by a ruling hierarchy which is determined to use that self-development to cast about the world the shadow of Communist domination.

To sense this issue at first hand is indeed a sobering experience. We came back deeply concerned about our poorer schools now suffering from neglect. But we returned with a new appreciation and renewed faith in the American system as reflected in our better schools, where citizens have cared enough and done enough to make the American ideal of a sound education for all come true, or nearly so.

The question is: Will we Americans work and sacrifice to extend to all of our youth the best in American schools?

L. G. Derthick

Chairman of the Delegation.

I. A Nation Committed

THE ONE FACT that most impressed us in the U.S.S.R. was the extent to which the Nation is committed to education as a means of national advancement. In the organization of a planned society in the Soviet Union, education is regarded as one of the chief resources and techniques for achieving social, economic, cultural, and scientific objectives in the national interest. Tremendous responsibilities are therefore placed on Soviet schools, and comprehensive support is provided for them by all segments and agencies of Soviet society.

One of the leading Soviet educators told us: "We believe in a planned society, you in individual initiative. Let time tell." They are convinced that time is on their side and that through education and hard work they can win their way to world acceptance of Communist ideology.

Everywhere we went in the U.S.S.R. we were struck by the zeal and enthusiasm which the people have for education. It is a kind of grand passion with them.

Wherever we turned we heard the slogan: "Reach and over-reach America." And everywhere, the people seem to respond in the conviction that education, in addition to hard work and the postponement of many creature comforts, is the best means of winning world supremacy.

Education reaches far beyond school-age children and youth and is eagerly sought by hundreds of thousands of full-time workers who are also full-time students; hundreds of thousands of others take correspondence courses. Many of these correspondence students also hope to qualify for university entrance. They do this because being well educated is the key to advancement. We are sure that the Soviet people anticipate the day when their present sacrifice for knowledge will bring them many rewards, but right now, as we see it, they regard good schools and universities as the necessities in their race for world supremacy.

And they have been building schools and universities at a rapid pace.

Down on the borders of China where only a half-century ago the people were almost 100 percent illiterate, we saw thriving schools, an impressive scientific academy, and other institutions that have reduced illiteracy and advanced knowledge to an astonishing degree. From the shores of the Black Sea to remote Siberia we found the attitude summed up in the expression of a Soviet education official: "A child can be born healthy, but he can't be born educated."

We have the impression that most people in the U.S.S.R. feel that conditions are improving gradually, that they are looking ahead for 5, 10, 15, or 20 years. They appear to be completely confident about achieving a quality of life and a standard of living fully as high as ours but realize that it will take time, sacrifice, and hard work.

There is still a considerable shortage of buildings resulting in part from tremendous damage during World War II. Very likely few people in the United States are familiar with the extent of the damage to both cities and rural communities in the Soviet Union in World War II—we were shown films of whole cities in ruins. Although whole cities have been rebuilt in less than 15 years, the normal supply of building and housing replacements, always low, has necessarily fallen behind. Housing is scarce, though relatively cheap.

People appear to be well fed and to have ample access to food stores and restaurants. Food is abundant, though not of much variety, and it is expensive. Clothing seemed to us to be very expensive and not readily available. In general, however, people seemed to be neatly, if not stylishly, dressed, by American standards.

There seems to be complete equality between men and women. The relationship between boys and girls in school appears to be characterized by dignity and mutual respect for each other. At each desk there is usually one boy and one girl. A professor at the University of Leningrad said: "With us, boys and girls, men and women, are partners. We are partners in education, partners in love, and partners in work."

A woman is expected to do any job as well as a man. Many women have entered the professions, particularly medicine. We saw women working with electrical crews, repairing telephone equipment, operating streetcars and busses, and working in factories. We noticed that many women specialized in mathematics and physics.

Education has been and is recognized as the source of past accomplishments and as the way to the future. The developments in the organization and practices of education at all levels during the past half century have been impressive both for their speed and for their extent. Wherever we went our hosts described with pride the contrasts between the present conditions and those existing before the revolution. That we returned with our faith renewed in the superiority of the American system for our society does not discount the tremendous efforts the Soviets are exerting

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to advance their kind of education to strengthen the Communist system. They tell many dramatic stories of the progress of their education, and all credited education with the improvement in their condition. The story summarized below, which we heard at the Ministry of Education in the Uzbek Republic, is one of the more dramatic but perhaps typical.

> This is a highly developed agricultural and industrial region now, but before the revolution it was a colony of Czarist Russia and was much retarded. Agriculture was primitive, crops were small, and the country was underdeveloped. Only 2 percent of the population was literate; there were no institutions of higher education, and the 160 schools were attended by 17,300 children of privileged families. There were no engineers, doctors, or teachers with higher education.
>
> Opportunity for education came immediately after the revolution, although schools were developed gradually. On December 2, 1920, Lenin decreed the establishment of the University of the Republics of Asia. In 1919 a decree on the elimination of illiteracy was published, and shortly afterward literate people began to teach the illiterate. Now we have an academy of science, an academy of agricultural sciences, 34 higher education establishments, 100 technicums, 50 special technical schools, 5,800 general or 10-year schools, 12 pedagogical institutes to prepare teachers, and 1,400 kindergartens. We have schools for people of each nationality in their own tongue, and we also have inservice education establishments. Altogether 1,300,000 children of all nationalities have an opportunity for education. More than 50 percent of our 80,000 teachers have higher education.
>
> We have many establishments to develop the interests of children. We work out our own courses of study for schools. Each Republic develops curriculums for itself because of differences in language.
>
> We have enough money to expand our education programs and buildings. Our people are rich; they like to work. All our people want peace. *We are sure we are able to meet the problems we face.*

As is indicated earlier, Uzbekistan is not an isolated example; we heard similar stories in other places—the description of similar accomplishments in the Tatar Republic, for example, was equally impressive. Such progress is dramatized for the people of the U.S.S.R. continuously by the State and the Party. In every possible way—particularly through art, music, and literature—the people are reminded of what has been done. Everywhere, in every school we visited, we saw pictures or statues of Lenin, and less frequently, Marx and Stalin, even in kindergartens. From infancy, children are taught that the highest good is to serve the State; school children through their clubs or circles, in classes, and in games are taught to identify all good things with the State; on class excursions and tours of museums, shrines, factories, they are taught the history of the revolution and to honor its heroes, underplaying the prerevolutionary achievements and emphasizing Soviet progress.

What we observed of Soviet education gave us the impression that the entire operation was being carried out on a systematically planned basis to achieve Communist objectives. To be sure, there were some excellent prerevolutionary foundations, institutions, and traditions of Russian education on which to build the Soviet structure—the academic secondary school of Imperial Russia; the Ballet School in Leningrad, over 200 years old; the great universities, especially in Leningrad and Moscow; the National Academy of Sciences; and the School for the Blind in Moscow that celebrated its 75th anniversary in 1947. These are just a few of the substantial roots from the past, and they should not be overlooked. It was always stressed, however, that education was restricted in prerevolutionary days to a very small proportion of the population of the vast area—one-sixth of the earth's surface—that today is the U.S.S.R.

Today, of course, education is planned, financed, controlled, and administered by the State. Even though education in the U.S.S.R. is controlled by the Government and is therefore standardized and regimented, there is some flexibility of operation. Furthermore decisions on policy, on textbooks, on teacher training, on curriculum, and on similar matters are not always made arbitrarily. We found fairly widespread evidence that before making decisions on education, the Government seeks opinions from specialists at all levels of education, from teachers throughout the country, and information based on research and experience. And it seems to get willing cooperation.

Few nations or people are today more passionately committed to education than the Soviet Union and the Soviet people are. The Soviets see what has already been accomplished and are confident of the future.

II. The Administrative System of Soviet Education

IN OUR VISIT to the U.S.S.R. we had the privilege of observing all the types of administration at the different levels. We had two extensive conferences with our host, the Minister of Education of the Russian Soviet Federated Socialist Republic (RSFSR), and sessions with his official assistants in the Ministry and with pedagogical researchers in the Academy of Pedagogical Sciences. We visited with the head of the Moscow City Department of Education and were guests of similar officials in Sverdlovsk, Leningrad, and Sochi. In Sverdlovsk, we had a conference with the whole of the city council. We visited general schools, houses of Pioneers, stations for young technicians, evening schools, kindergartens, and other types of schools. We also had the opportunity to visit other Federal Republics. We were received by Ministers of Education in Kazakhstan, Uzbekistan, and Belorussia, and we acquainted ourselves with their organizations, which are similar to those of the Russian Federation.

We also visited one autonomous republic, the Tatar Republic in the Russian Federation, where the local Minister of Education, a woman, was our hostess. In Moscow we visited the Ministry of Higher Education for the whole Soviet Union, had a conference with the Assistant Minister, and later met with the Minister. Through his offices we visited universities, institutes, and academies of science. We did not visit any Ministries of Culture, although we were taken to numerous museums, a park of culture, ballets, operas, and choir performances. At several such functions, however, we met and talked with officials of the Republic Ministries of Culture and on some occasions with the Ministers themselves.

This chapter reports some highlights of the information we acquired on the system of Soviet education—its administration, organization, and financing.

Administration

The fact that Soviet educational administration is centralized has often been commented upon. In outward form, however, the Soviet school system is decentralized, with 15 Republic Ministries of Education and many regional and local departments of education. The official pattern before one's eyes is therefore diversity, not uniformity; diffusion, not centralization. This is so even if we disregard the variations deriving from a system of such vast dimensions. Uniformity in educational policies and methods is nonetheless real and is brought about by an invisible hand, and one becomes very much aware of this fact.

Educational policies (including those on science and research) and administration are controlled at three different political centers by appropriate bodies responsible for these fields: By Federal governmental agencies (ministries and bureaus), by Federal organs of the Communist Party, and by Republic bodies of both Government and Party. These various centers of political authority over education are entrusted with supervising the carrying out of laws passed by the legislatures (Supreme Soviets) and the decrees issued by the various Councils of Ministers and Central Committees of the Communist Party in the U.S.S.R. as a whole and the 15 constituent Soviet Republics.

Primary responsibilities for the administration and operation of schools lie with the Ministries of Education at both Federal and Republic levels of jurisdiction and with other governmental agencies concerned with them. Table 1, below, shows the different levels of jurisdiction and the various agencies exercising power in education.

At the Federal level of jurisdiction, the U.S.S.R. Ministry of Higher Education has far broader powers over college-level and specialized institutions than has any other single agency. It has complete jurisdiction over some 220 higher institutions, has incomplete jurisdiction over another 400, and controls questions of science, research, teaching, and methodology in all other higher and specialized educational programs. The Ministry thus shares jurisdiction with other agencies, like the U.S.S.R. Ministry of Health and the U.S.S.R. Ministry of Culture, which operate special colleges and schools in their fields of activity.

National-Federal ministries (railways, communications, etc.) administer special professional colleges and schools throughout the Soviet Union. In some cases, such institutions are administered by Republic Ministries (such as Health, Agriculture, and Culture), under the general supervision of the National-Federal Ministry, wherever these Republic Ministries exist.

At the Republic level, the 15 Ministries of Education in the 15 Republics are responsible for administering regular primary-secondary school programs and teacher-preparatory institutes. In these Republic Ministries, all of the day-to-day practical work of school management, teacher recruitment, and provision of materials is carried out. Some supervision of teachers institutions is exercised by the U.S.S.R. Ministry of Higher Education.

We know, of course, that Party supervision of all the organs of administration inevitably cements them into unity. But anyone familiar with rivalries which the great agencies of government develop in any country will realize that this division of responsibility is significant. We saw quite a few indications of the independence and autonomy of the three branches of educational organization; for example, since we were guests of the Ministry of Education, our hosts had always a little more difficulty when arranging for us to visit institutions under jurisdictions other than their own.

In addition to the twofold over-all division of educational administration, there are various levels within each major division. This fact is best illustrated in the 15 constituent Republics of which one, the Russian Republic, is a giant comprising about three-fourths of the country and more than half the population. This Republic is justly called the Russian Federation and is the leading administrative unit of the whole Union.

Each Republic is divided into basic units of administration called oblasti (regions), departments, or counties. Whenever such departments contain within their boundaries a separate and distinct nationality they cease to be called departments. Instead, they are invested with partial self-government by the nationality concerned and called *autonomous republics*, subordinate to the Federated Republic of which they are part but distinct from the oblasti through their administrative privileges. Smaller national groups live in distinct and only semi-autonomous oblasti or krai, which need not concern us here. There is thus in the Soviet Union a Federal level of Government, a State or constituent Republic level of Government, and sub-state or autonomous republic level.

The oblasts are in turn divided into districts (raions). At each of these sublevels there is an office (department) of educational administration, an oblast office (or oblono) in the country or an equivalent city office (gorono). These administer the district offices (raiono), which in turn administer schools and various other agencies such as institutes for the improvement of teacher qualifications, and Pioneer palaces, which are houses provided for organizations of Soviet youth. The line of administrative responsibility goes thus from the director of the school to the head of the raiono, to the head of the oblono or gorono, to the Minister of Education. This line of responsibility pertains primarily to personnel, curriculum, and other administrative matters.

Power lies, of course, in the same hands as the political direction, but an obvious effort has been made to hold this fact discreetly from us. Nowhere during our visit was the name of the Communist Party volunteered as a participant in the educational enterprise, and our request to

Table 1.—The Administrative System of Soviet Education

Political level of agency jurisdiction	Substantive areas of agency jurisdiction	Educational agencies	Other agencies
I. *Federal* (entire U.S.S.R. composed of 15 Republics)	Higher schools (all aspects) Science and research Teaching and methodology in teachers institutes and in special secondary, vocational, and technical schools Vocational, trade, and technical schools Planning and budget (delegated powers) Construction and property Publications	U.S.S.R. Ministry of Higher Education[1] U.S.S.R. Main Administration of Labor Reserves U.S.S.R. Academy of Sciences	U.S.S.R. State Planning Committee U.S.S.R. Ministry of Health U.S.S.R. Ministry of Culture U.S.S.R. Ministry of Railways U.S.S.R. Ministry of Communications U.S.S.R. Ministry of Agriculture U.S.S.R. Ministry of Defense, etc. Republic and Regional Economic Councils and Enterprises
IIa. *Republic* (each of 15 Republics)	Special institutes and schools (programs) Teachers' institutes Elementary and secondary schools (all aspects) Pedagogical research Planning and budget (delegated powers) Construction and property Publications	Republic Ministries of Education Autonomous Republic Ministries of Education Republic Academies of Sciences	Republic Ministries of Health, Culture, etc.
b. *Krai and Oblast* (Territory and Region)[2]	Elementary and secondary schools (delegated powers) Planning and budget (delegated powers) Construction and property	Krai and oblast departments of education	Agricultural and industrial establishments
c. *Raion* (district) and *city or town*[2]	Same as above	Raion and city or town departments of education	Same as above

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[1] The Ukrainian SSR Ministry of Higher Education shares in the control of college-level institutions located in the Ukrainian Republic.

[2] Large municipalities like Moscow and Leningrad are on the administrative level of oblasts; small municipalities are on the level of raions.

visit the branch office of the Party Central Committee concerned with education was refused on the ground that this office had little to do with education.

In answer to our questions, officials said that the Party exercised an overall direction over education and that from 25 to 30 percent of teachers were members of the Party. Everywhere, school work is openly associated with party-oriented preparatory organizations. The immediate direct contact of the Communist Party with the schools is slight. It is confined to the overall supervision by special departments on education under the Central Committees of the National and Republic Party organizations, to the appointment of Party members to crucial administrative and teaching posts in education; and to the sponsorship of youth organizations, such as the Young Pioneers for the 9- to 14-age group and the Komsomols for older groups.

The work of these organizations is the best available evidence of the interest of the Party in education. Centers for political and social activities are found in each school under the direction of specially appointed youth leaders and Party activists. In addition, the organizations run Pioneer Palaces and camps at which most of the extracurricular educational activities take place. It is in these institutions that we find the majority of the school "circles," or clubs dedicated to the furthering of a particular interest or specialty of school children (see Chapter V). It is significant that the most pleasurable and diversified phase of the school program is associated with the name of the Party and its auxiliary organizations. Although the ordinary school authorities have no jurisdiction over that part of education, the Ministries of Education help supervise extracurricular school activities and run their own circles inside the schools and in stations for young technicians, naturalists, and others.

Organization

The major facts of school organization are now generally known. They are discussed in detail in *Education in the U.S.S.R.*, published by the Office of Education in 1957. A profile of school organization showing age group served is presented in the chart, page 11. At the bottom are the nurseries which serve children up to 3 years of age and at the top the research institutes which, like the universities and institutes, conduct research and train "aspirants" for higher degrees but, unlike the former, do not train undergraduates. Between these two extremes are the main institutions of the Soviet school system: The kindergarten, serving children between the ages of 3 and 6; the general education school, offering grades from 1 to 10; and the universities and institutes. Together, these institutions, located throughout the entire Soviet Union, supply the educational services to Soviet children and youth.

The nurseries or day care centers (iasly) are under the jurisdiction of the Ministries of Health or municipal agencies or are organized by factories or collective farms.

The kindergartens are subject to educational administrative organs in the Republics. They are uniform in organization and operation and resemble, more closely than other U.S.S.R. schools, those with which we are familiar. They are under the control of the special department in the Ministries of Education.

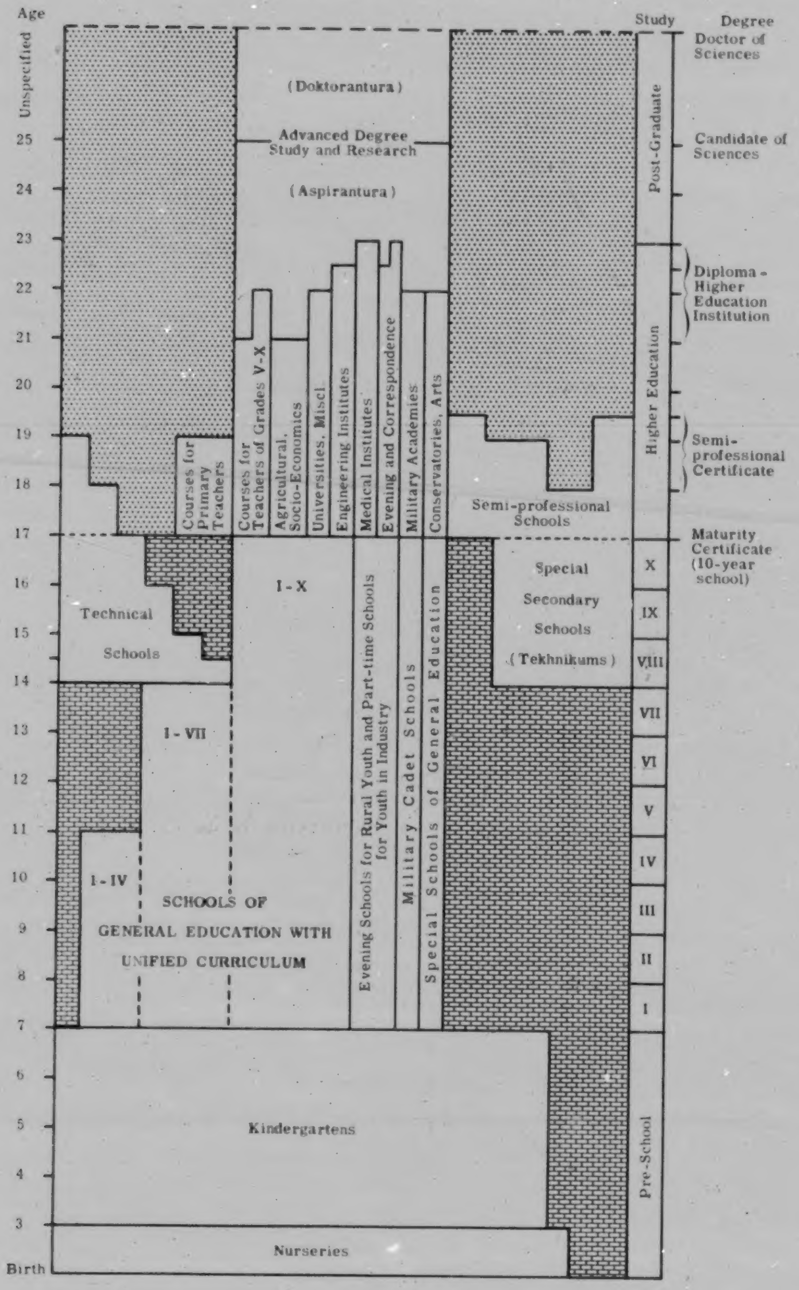
It is in the area of general education that the greatest differences in schools are found. Most schools offering general education are rural 7-year schools and rural or urban 10-year schools, all having almost identical curriculums. However, a growing number of boarding schools also offer general education. A limited number of military cadet schools, gymnastic schools, schools of music and fine arts, ballet schools, and the like provide specialized education in addition to general education. Experimental schools of the Academy of Pedagogical Science try out its proposals for reform. A few foreign language schools give instruction in a foreign language and nationality schools instruct in the native language and make Russian a second language. Various schools for the physically handicapped administered by the different ministries, according to the nature of the disability, complete the picture of variety in the general education program.

Parallel to the upper 3 grades of the general schools are varieties of technicums and pedagogical schools, which are increasingly giving postsecondary education, and schools for urban and rural youth which offer a general education course to young workers. Other institutions such as labor reserve schools, which teach vocational skills, also provide elements of general education. In addition, educational programs are offered through circles or clubs in Pioneer palaces, camps, and other projects sponsored by municipalities or industrial plants and collective farms.

Party schools, military academies, institutes for the improvement of teacher qualifications, industrial courses, adult circles of general education, all these belong to the level of postsecondary education. Most of the schools at this level offer day-time education; many offer evening courses; and some offer correspondence courses. Not all grant diplomas, and the nature and quality of instruction vary with each type.

The importance accorded to correspondence study in the U.S.S.R. is most impressive. In 1958 more than 750,000 persons were enrolled in correspondence courses. Between 65 and 70 percent of the universities and institutes under the auspices of the Ministry of Higher Education maintained correspondence facilities, and more than one-third of the students enrolled in these institutions were in correspondence courses.

EDUCATIONAL SYSTEM IN THE SOVIET UNION


Age
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Birth
(Doktorantura)
Advanced Degree Study and Research
(Aspirantura)
Courses for Primary Teachers
Courses for Teachers of Grades V-X
Agricultural, Socio-Economics
Universities, Miscl
Engineering Institutes
Medical Institutes
Evening and Correspondence
Military Academies
Conservatories, Arts
Semi-professional Schools
Technical Schools
I - X
Special Secondary Schools (Tekhnikums)
I - VII
I - IV
SCHOOLS OF GENERAL EDUCATION WITH UNIFIED CURRICULUM
Evening Schools for Rural Youth and Part-time Schools for Youth in Industry
Military Cadet Schools
Special Schools of General Education
Kindergartens
Nurseries
Study
Post-Graduate
Higher Education
X
IX
VIII
VII
VI
V
IV
III
II
I
Pre-School
Degree
Doctor of Sciences
Candidate of Sciences
Diploma - Higher Education Institution
Semi-professional Certificate
Maturity Certificate (10-year school)

Industrial establishments cooperate in the correspondence study of their workers by paying their wages for a month, once or twice a year during the period when the student is actually at the institution to review the year's study or prepare for examinations. In some industries students doing well in correspondence courses are given shorter hours of work so that they may have more time for study. To complete diploma work, the student is given 4 months' leave; for the first month he is paid by his employing establishment and for the other 3 he receives a stipend from the educational institution. The institution also pays the cost of travel to and from the point of employment.

The Sixth Five-Year Plan called for an increase in the number of correspondence and evening courses. We were told that Government authorities wish to enlarge the network of evening and correspondence education in order to provide cultural education for older workers and persons who cannot enroll as full-time students and for all graduates of general schools who go to work but wish to continue their education.

In addition to correspondence education supported by the Government, the Communist Party institutes and labor organizations also provide correspondence education; it is largely concerned with political and economic education rather than with the humanities.

After a week in the Soviet Union we realized that adult education, as we think of it in the United States, was so much a part of the normal life of the average Soviet citizen that it was impossible to define its boundaries. To describe its scope and character would require outlining the cultural life of virtually all adults between 25 and 60—from the high ranking members of the Communist Party to persons in remote areas who are still emerging from primitive patterns of life. There are extensive programs of discussion groups, of education through trade unions, of lecture bureaus, clubs, reading rooms, and museums. In addition, the Government publishes a great volume of books, magazines, and newspapers and distributes copies of them through Government bookstores.

Education at the higher level is provided primarily by the universities and institutes. The former, slowly expanding in number, contain all the faculties in academic fields. The latter are single speciality institutions. Whereas universities are distributed according to historical accident or to suit territorial and national ambitions, the institutes, like the technicums, are established according to the needs of each region. For instance, in the town next to the palace of Peterhof near Leningrad, famous for its wealth of historical fountains, a hydraulic technicum has been established. Conversely, the fact that Moscow has several fishing and mining institutes not justified by the needs of the region has recently been criticized by Mr. Khrushchev.

Above the level of undergraduate institutions are the academies of sciences and the various research institutes and scientific collectives associated with them or with various universities or industrial trusts. These are primarily research institutions and only incidentally educational. The Ministries of Culture, the libraries, museums, theaters, and other artistic and musical centers offer activities that are in part educational and in part adult entertainment.

Financing

Typical of the commitment of the Soviet Union and the Soviet people to education is the provision that is made for its support. While exact figures on the total cost of education annually in the U.S.S.R. are difficult to obtain, it is generally conceded that from 10 to 15 percent of the total national income is channeled into education of all types.

That buildings, teachers, equipment, and supplies in adequate measure will be provided by the State is taken for granted. The chief administrator for the Moscow schools, when questioned about financial support, said "The children have to be educated, don't they? The educational needs of boys and girls must be met. The money to do the job is always forthcoming." These needs, ranging from the nursery through the university, are recognized in the support which, we were repeatedly told, is freely and enthusiastically given.

The State budget for education provides for building construction and maintenance, supplies and equipment, salaries of teachers at all levels, stipends for students in institutions of higher education, special programs in education, and miscellaneous expenses. Industrial enterprises and collective farms also provide considerable supplementary support for education, primarily in equipment and facilities.

Finances for current equipment and school buildings come directly from local city or county government rather than from the Minister of Education. Each year the head of the relevant educational office reports through the finance administrator of the local council his budget and his building needs. Soviet educators maintain that the budget allocations are never below their requirements nor subject to major alterations, and that school buildings (usually provided by a separate ministry which deals with building construction) are always given first priority.

In considering the total U.S.S.R. expenditures for education, particularly as compared with those of other countries, we should remember that mass public education is a recent development, that the Nation is still in the process of becoming industrialized, and that her need for professional and skilled manpower has developed at a faster rate than that of many other countries. In other words, the dimensions of the need for expenditures are not comparable, nor is the rate of progress

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comparable. In any case, U.S.S.R. expenditures for education, for buildings, teacher-training, and for higher education have been and are heavy.

The U.S.S.R. has supplied funds for an extensive building program within the last few years: First, to provide for the education of large numbers of people not previously provided for; second, to replace buildings destroyed by the war; and third, to provide schools in virgin lands now being opened up. For example, in the city of Sochi, we were told that in 1913 there were 2 schools with 8 teachers and 138 pupils; now there are 20 general schools, 500 teachers, and 15,000 pupils, some part-time schools for pupils who work in industries, a correspondence school, and a special school for children who need medical care.

The close cooperation between industrial enterprises, collective farms, and educational institutions seems to result in mutual benefit, as a few examples will show.

★ In one city we visited we found that industry was constructing two new buildings for the polytechnic institute, that teachers at the institute spent 3 hours a day in scientific research of value to the industry, and that engineers in industry helped institutes formulate diploma projects and served on examining committees.

★ A shop in Leningrad sells dresses designed and made by students in a technicum there.

★ Approximately 1,800 full-time and 500 part-time students enter the Institute of Electrical Power Engineering each year, for a 5½ year program. At the end of the 3d, 4th, and 5th years students spend from 6 to 7 weeks in industry. The Institute has a printing shop, experimental laboratories, a number of larger buildings, and some new ones under construction. Its total budget for the year is 100 million rubles;[1] industry contributes 30 million rubles, and some of the Institute's research is done at the request of industry.

To provide the professional and trained manpower the U.S.S.R. needs as a world power, the State is financing education of many young people by paying them stipends of varying sizes, with the size fixed by the Ministry of Higher Education. The following isolated facts may give some indication of their effort and the cost.

★ The cost of educating a student at the university is said to be 11,000 rubles a year on the average. However, at Moscow University it runs somewhat higher.

★ About 80 percent of the 1,178,000 full-time students in institutions of higher education receive stipends. None of the students in these institutions pays tuition.

★ The stipends of university students usually range from 240 to 750 rubles a month (from $24 to $74) but are higher in fields such as mining and chemical engineering than in pedagogy, and with increases according to stage of progress through the university. An additional 25 percent is granted to students with grades of "excellent" in all their courses.

★ Students at the Minsk Polytechnic Institute receive stipends of from 300 to 500 rubles a month. The annual budget of the Institute is 54 million rubles. We were told that it used to cost 70,000 rubles to train an engineer, in total 5-year programs, but now costs 45,000 rubles ($900 a year at the tourist rate of exchange).

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[1] The official rate of exchange is 4 rubles to the $1, but it is not an adequate measure for conversion purposes. Once inside the U.S.S.R. the rate of 10 rubles to $1 usually applies.

* The Uzbek Minister of Education told us that the cost of education per student per year in a general school was 1,000 rubles but that it was 500 rubles a month per student in a boarding school. In other words it is about 5 times as expensive, not taking into account the capital construction costs of a boarding school.

City Educational Administration: Moscow

While we were in Moscow we conferred with Anatol Shustov, who as City Director of Education is the chief education officer of the city. His position is similar to that of the superintendent of schools in a U.S. city. Mr. Shustov, with some of his key deputies, received us in his private office, which, like most of the other conference rooms we saw, contained a long conference table loaded with refreshments.

Moscow has 678 general schools, 1,050 kindergarten establishments serving children at ages 3 to 7, and a number of crêches for children from 2½ months to 3 years old.

In addition to the general schools, a number of special schools are under Mr. Shustov's jurisdiction, including those for the blind, the deaf, the deaf and dumb, the partially sighted, and the mentally retarded.

The enrollment reported for the 1957–58 school year for the preschool youngsters, including those in crêches, was 110,000, and in general schools, 600,000. In addition 80,000 young adults were completing their secondary education in full-time study after working full-time shifts. The percentage of boys and girls in the total enrollment, according to Mr. Shustov, is about equal.

In response to questions on attendance, Mr. Shustov said that the census provided names and addresses of children and that the compulsory attendance law was strictly enforced. Each school has a complete list of pupils assigned to it. Special committees of teachers and parents serve as attendance workers who visit homes as "their social work." Mr. Shustov and his staff insisted that it was "out of the question not to go to school—absolutely out of the question." In further comments on attendance he repeatedly emphasized that the parents wanted their children to attend school.

A doctor's certificate must be furnished as an excuse for an absence due to illness. If it is questioned, the matter is referred to the Parents' Committee. The Pupils' Pioneer Committee occasionally checks up in doubtful cases having to do with irregular attendance. There are also legal steps which schools can take when necessary.

The schools of Moscow are organized as general schools. The number of pupils averages about 1,000 to a Moscow 10-year school, which, for the most part, is the customary size of schools shown to visitors though not representative of the network of small schools covering the country. In the 1957-58 school year 27 percent of the children in Moscow were on two shifts—the first shift ran from 8:30 a.m. to 2 p.m., and the second shift from 2 p.m. to 7 p.m. The single shift schools were scheduled from 9 a.m. to 2:30 p.m.

Mr. Shustov and his staff insisted under our close questioning that no occupation in Moscow rated above the teaching profession and that teachers' salaries were commensurate with doctors' but above lawyers' salaries.

Salaries are based on units of work with 18 hours a week usual for teachers in secondary schools and 24 hours in elementary schools. We were told, in general terms, that a beginning elementary teacher receives 670 rubles a month for this minimum program. Any additional work a teacher does calls for additional pay. The beginning secondary school teacher receives 750 rubles a month for an 18-hour unit of work and, like all other teachers, is paid for teaching duties in excess of this minimum. The maximum salary for the elementary teacher is from 800 to 900 rubles a month and for the secondary teacher 1,200 rubles a month. A doctor begins at about the same rate, possibly less. A carpenter receives from 500 to 600 rubles a month; a waiter, 400 rubles; a store manager, 1,000 rubles and above; and a street sweeper, 300 rubles.

A teacher receives a pension equal to 40 percent of her salary after 25 years and may continue teaching, drawing both pension and regular salary.

For problem teachers or teachers who are failing, we were told that there are retraining programs in which very good teachers assist the poor, and that once each week experts on methods are brought in for meetings with them. The teacher who is failing also has special help from his school principal, and he may be sent to an institute. If nothing helps him to improve, he is fired. Every 5 years each teacher must take training which is scheduled bi-weekly, one afternoon every other week, throughout the school year.

Schools are built by the Moscow Department of Construction. School building plans are standardized for construction purposes—all are the same throughout the city. Forty-three schools have been completed or are under construction for the current school year.

The Moscow Soviet (City Council) appoints the city director of schools and three vice-directors. Mr. Shustov himself is a member of the Soviet which appoints him. There are two lines of authority to the director—one from the Minister of Education, who gives him instructions, and one from the Moscow Soviet.

Mr. Shustov explained that Moscow is divided into 20 districts and that there is a head office and staff for each one. In other words, each district has its own department of education, but all are under the city director.

On the central staff of the city director of education there are 70 people; the figure does not include the administrative and supervisory personnel for each district.

One vice-director is in charge of the *school sector* (the sector is the primary unit of organization in the director's office). There is 1 inspector for each 2 districts, and the 10 district inspectors are included in the figure of 70 mentioned above. The figure also includes 1 inspector of special education, 1 of forest schools, 1 of adult evening schools, 1 of extracurricular programs, 1 of Pioneer houses, and others. All of these officials are attached to the *school sector.*

The second sector deals with *orphanages.* The third sector has to do with *preschool education* and the fourth sector with *plans* and *finance;* the fifth sector, the *personnel sector,* chooses directors below the three major vice-directors, who are chosen, like the top director, by the Moscow Soviet. The sixth sector has to do with *school building improvement.*

There are various other minor organizational units, Mr. Shustov said, such as the *office of supply.*

Two meetings a month are held for the leaders of each district. Every month there is a meeting of principals in each of the districts. Two times each month, or 24 times a year, there is a general principals' meeting. The teachers' meetings are held at the district level; one in August—a teachers' institute—and one in January.

On financial operations we learned from this conference that:

1. Each district has its own budget.
2. There is an overall city budget.
3. Plans and recommendations for budgets are submitted to "the Moscow City Council," which makes the assignment of funds.

Moscow receives its school income from factories and commercial establishments, and if this source does not provide enough money for operating expenses, the deficiency is made up by the State, that is the RSFSR. The operating budget for the school system is based on the budget for each school. Incidentally, each school has its own bank account and pays its own bills.

In response to our question, "What are some of your problems?" Mr. Shustov indicated:

1. The need to agitate for tennis courts; they are not in the standard plan.
2. Teacher shortage is *not* a problem.
3. The development of polytechnic education and the likelihood of having to add an 11th and possibly a 12th year to the general school program.

4. Skill education in relation to general education.
5. The need for more equipment.
6. The need to relate subject matter more closely to life.

When we facetiously commented that it would appear that the Moscow Director of Education "was without serious problems," Mr. Shustov assured us that such was not the case and said that many problems would be apparent were we to occupy his position.

We were impressed not only by Mr. Shustov's personable qualities but by his evident enthusiasm for his work and his great commitment to it.

III. Nurseries and Kindergartens

Nurseries or Day Care Centers

IN THE U.S.S.R. most women work outside the home. Many of them work in industrial plants. For mothers with young children nurseries (generally called crêches) are provided for the care of children from 2½ months to 3 years old. Such nurseries are usually sponsored by the industrial plant that employs the mothers, but are under the supervision of the Ministry of Health. By protecting the health of the child and the mother, by caring for children, and by enabling many women to engage in gainful and productive employment, such centers render a social service that supports the family as an institution. Although the Government has not been able to provide all the nurseries needed, the number is growing. It should be made clear that the nursery is not in any formal sense a part of the educational system of the U.S.S.R. but is, nevertheless, a part of a total program for child training.

We visited one nursery in Sverdlovsk, a city of more than 700,000 population where there are 100 crêches or nurseries. Fourteen of them are sponsored by the Urals Machine-building Plant which employs 16,000 persons, 20 percent of them women. This big industrial concern was labeled by an interpreter as "the plant of plants," since it manufactures machines that make machines. In the plant huge signs proclaimed that it expected to increase production by 64 percent under the present 5-year plan, and another sign nearby announced that the number of crêches would be increased by 2.4 percent.

Crêche No. 5, the one we visited, cares for 200 children under 3 years of age. The mother places her child in the nursery without charge. If it is a baby still being breast fed, the mother is relieved from work for 2 hours a day, but at two different times, to feed it. Incidentally, in Sverdlovsk the prospective mother has 52 days of maternity leave with pay.

Usually the mother brings her child to the center at 7:30 a.m. and calls for it at 5:30 p.m. The mother's working day is now 8 hours; we were told, however, that the Urals Plant hopes to reduce it to 6 hours. The center operates on a 24-hour basis and children may be left from 7:30 a.m. on Monday through Saturday afternoon, since Saturday is a short work day, and then taken home for the weekend. If the mother is the only parent she may place her child in the boarding school attached to the Gorky general school, which is near the plant, when he reaches the age of 1 year.

The Buildings and Grounds

The building, which looked old as did most school buildings in the Soviet Union regardless of their age, was a separate two-story structure with several porches. On one sleeping porch we saw some of the youngest children swaddled in sleeping garments while they slept; on other porches older children played under cover. There was a large play yard with a sand box, toys, and other equipment. The whole building was spotlessly clean.

The Program

Children were grouped by age, beginning with those 2½ months to 9 months; from 9 months to 1 year and 3 months; from 1 year and 3 months to 2 years; then a group of 2-year-olds and one of 3-year-olds who would soon be moving to the kindergarten. Groups of 3-year-olds were as large as 24, 26, or 28 children.

The factory which sponsors this nursery gives it 6,000 rubles a year to buy toys and books. There were colored beads or hand toys for infants; approximately 8 toys per child are provided for children over 2 years old. One 2-year-old boy worked persistently trying to feed his doll, then pretended to feed himself. Children over 2 years of age played outdoors, each group using various kinds of toys or equipment similar to those which would be used in the United States by children of the same age. The program for the older children included play, a walk, music, dancing, and listening to stories. In the 3-year-old group, children used picture books that were kept in wall pockets. A child sat at a low table turning the pages of his book as he looked at the pictures. The children appeared healthy and well cared for.

Staff of Urals Crêche

A staff of 60 persons which operates this crêche for 200 children includes 22 nurses, 22 assistants, 2 doctors, 2 chief nurses, a visiting nurse, and a director, the others are cooks, caretakers, building custodians, and persons doing comparable work. To be eligible for employment in this crêche, a nurse must have completed a 7-year school and a 2-year course in nursing. The nurse gives the kindergarten children some educative experiences as she cares for them.

Kindergarten Education

An official of the Ministry of Education, Moscow, who is head of the Department of Pre-School Education, talked with us about the organization of kindergartens and their programs for young children. The Ministry is responsible for providing the buildings, which are referred to as "Kindergarten Establishments," and which are set up independently, not simply as rooms in elementary school buildings, as is typical in the United States. The Ministry of Health cooperates in choosing appropriate sites for buildings, in providing for the physical care of the children, and in checking the sanitation features. On small collective farms, however, the Ministries of Education and Health occasionally cooperate to establish a nursery or day-care center and kindergarten under one roof with one director.

Types of Kindergartens

Kindergartens are operated in several ways; one-third of them are operated by the Ministry of Education and the others by industries, by collective farms, or by other groups.

In August 1937, a Government decree provided for kindergartens as follows: Big industrial organizations employing not less than 500 women must provide kindergarten facilities for 15 children for each 100 working women. In organizations employing fewer than 500 women, the Ministry of Education takes complete responsibility. At present, the Ministry is building 2,000 kindergarten establishments a year but is not able to provide enough facilities for all children ages 3 to 7.

A Government decree issued in 1956 provides that in all new apartment developments kindergartens are to be built and operated by the Ministry. For each 1,000 persons living in such a development, space for a kindergarten for 125 children must be provided.

In rural areas collective farms that have a good income build kindergartens and operate them throughout the year. Collective farms that are not strong financially build temporary seasonal playgrounds for children of kindergarten age and operate them for 5 or 6 months of the year. In a section on collective farms at the Agricultural Exhibition which we visited in Moscow there is on permanent exhibit a typical rural kindergarten:

Availability

Since the Ministry of Education is not yet able to provide kindergartens for all children ages 3 to 7, children of employed parents, of employed mothers, especially those in industry, or children of Party members are given priority. Parents pay tuition, the amount depending on their wages and the size of their family, but the average, a Ministry official told us, is from 18 to 20 percent of the cost of the service. It is estimated that parents pay about 40 percent of the food costs, and the rest is paid by the State or by the sponsor. Some parents, however, pay nothing; for example, unmarried mothers, persons on pension, or persons who have been injured in industry do not pay.

Qualification of Teachers

The director of the kindergarten is especially trained to work with kindergarten children and usually has had at least 5 years of experience at this school level. She is appointed by local education authorities who are usually active in the Party. Kindergarten teachers are especially trained at pedagogical normal schools and in preschool departments of pedagogical technicums. There are 52 such normal schools with preschool programs. Girls who graduate from the general or 10-year school with high honors may study to become preschool teachers. We were told that there were more applicants than could be accepted in these schools, but we were unable to get the percentage of applicants accepted.

Selection of applicants is based upon such factors as the following: (1) Musical abilities, (2) interest in sports, and (3) desire to be trained as a preschool teacher. Each applicant must have recommendations from the school she has attended. Many persons trained as elementary school teachers become preschool teachers, but they are required to take additional training or retraining. The 3-year course includes methods of teaching, music, drawing, work with clay, child psychology, literature, and hygiene.

A typical kindergarten provides for 100 children. For each group of 25 children there should be a teacher. In addition for each group there is provided a nurse who is not specially trained as a teacher but whose duty it is to maintain the classroom and care for the children. We were told that to qualify for work in the nursery in Sverdlovsk, the nurse must take a 2-year course after completing a 7-year school, and it may be assumed that similar standards apply generally in nurseries and kindergartens.

Operation of the Kindergarten

Kindergartens operate on a 24-hour day, although no one teacher works for more than 6 hours. An around-the-clock program is necessary because in many families both parents work on different shifts. In addition some children that have only one parent need to stay from Monday morning at 7:30 until early afternoon on Saturday, which is a short working day.

Day children are organized by age groups beginning with age 3. Those who stay around the clock are organized across age lines from 3 to 7, but if there are too many for a group, then one group might include the 3's and 4's, the other the 5's and 6's.

Transportation

In some cases where distances are great, transportation may be provided by the sponsoring industry. Usually, however, children live close enough to the kindergarten for their parents to bring them to school.

General Program

The program for kindergarten children includes emphasis on health and physical education, moral education, respect for and experience with useful labor, clear and correct speech, music, singing, dancing, drawing, and modeling. Children are taught to pay attention and to follow verbal directions. Under the heading of "moral education," emphasis is given to developing the "sense of the collective," which is basic in Communist philosophy.

We had heard that children were being taught reading and some academic skills in the kindergarten, but an official of the Ministry told us that no such program was in operation. Children do learn to count to 10, using real objects, but that is the only academic learning as such that we found at this level. Children in the kindergartens, unlike those in the general schools, do not wear uniforms. In many kindergarten establishments a bulletin board for parents provides information on suitable dress for children's activities.

Although we visited kindergartens in widely separated cities, the programs were in general the same, illustrating the uniformity that seems to be typical in the Soviet Union. The cities were Minsk, Kazan, Sverdlovsk, and Sochi.

Minsk

In Minsk the head of the department of preschool education in the Ministry of the Belorussian Republic talked with us about kindergartens, their problems, their work with parents, and in-service education of teachers. She said that their problems were indeed great since all kindergartens in that Republic were destroyed in World War II. As in other

Republics there are many priorities in building, and kindergartens can have only their share of new construction.

Every teacher is required to visit the parents of children in her group on her own time. As parents are more likely to be at home on Saturday afternoons, she usually visits them then. Each month parents come to the school for discussion on the upbringing of their children, for "one of the major purposes of kindergartens," according to the director, "is to help mothers bring up children." In addition to this monthly meeting parents meet with teachers to discuss problems. Such groups are formed on the basis of the ages of children, and meetings are usually held on Saturday.

Teachers of kindergarten children must attend a 2-week refresher course each year. After each 5 years of work they take a month's course and on completion receive a certificate. The teacher receives her salary and stipend during this period. In this Republic, retraining is provided for persons with elementary or secondary school background to qualify them for work in kindergartens.

The visit to a kindergarten in this city provided information on the staff needed for an establishment operating on a 24-hour daily basis with 120 children enrolled in 5 groups. The staff included a director, assistant director, 9 teachers, a teacher of music, 2 nurses assigned to each group of children, a medical doctor available 3 days a week, and an assistant to the doctor available every day, plus 2 cooks and other helpers. Children may spend 6, 10, 12, or 24 hours a day in this kindergarten. They are grouped as 3-year-olds, 3's and 4's, 4's and 5's, 6's and 7's, and a mixed age group for those on a 24-hour day basis. This school is operated by the Ministry of Education and is not sponsored by an industrial plant.

Although there is space inside the building for all groups, on fine days children spend much of their time outdoors in shelters that are roofed, open on one side, lathed on two sides, with a wall on the fourth side. We noticed children, under supervision, playing with dolls, toys, blocks, balls, hoops, or in sand boxes. The 6's and 7's were playing a game similar to Three Deep. Some children helped to care for flower borders on the grounds.

Indoors as part of useful labor experience they cared for parakeets and for an aquarium. In each group children took turns in wearing aprons and arm bands as they swept floors or helped in setting tables and clearing lunch dishes.

A group of 6's and 7's demonstrated folk songs and dances which showed the beginnings of the highly skilled dances performed in the theatres. A group of 7 or 8 of these children presented a puppet show, "The Gingerbread Boy." It seemed evident that these children had spent a great amount of time practicing the play. The next day the children were to be taken to the country for the summer.

Kazan

We visited one of 142 kindergartens in this city of several hundred thousand population; it was sponsored by an industrial plant. The staff consisted of 50 persons for a group of 200 children, comparable to that in Minsk. Among the playthings we noted was a rocket-nosed pedal-propelled wagon which the director said was the childrens' favorite. Here we observed indoor play and numerous toys and picture books. Children of this kindergarten were leaving soon to spend 3 summer months in a pine forest in the country. They produced a charming performance of Tatar folk dances for us, with the entire group in the native costumes.

Sverdlovsk

Here again in the industrial city of Sverdlovsk we visited a kindergarten sponsored by the Urals Machine Building Plant. The 7-year-old children who would be entering the first year of school in September 1958 presented a program of songs and dances. As the program began a boy stepped forward, greeted us in English, and then in a speech which he had learned, asked that we take their good wishes to children of the United States. This was a frequent occurrence in many schools visited.

Sochi

The 100 children in the kindergarten we visited came from homes of construction workers. This kindergarten had practice teachers assisting. Here the music teacher was working with the mixed age group. As she played the piano she asked children to identify songs and to tell whether they were played fast or slow, loud or soft. Later we saw this group drawing pictures with colored pencils on sheets of paper about 8 by 11 inches in size. Although most of the children drew conventional pictures of flowers, others drew houses, planes, ships, and trees.

The educative experiences which children have in the kindergarten years make it possible for teachers to emphasize academic work early in a child's first year of school. This practice is in keeping with the goals of Soviet education.

IV. Schools of General Education

THE GOAL of public education in the U.S.S.R., according to official statements, is to produce broadly educated citizens, with the kind of cultural and prevocational background which will enable them to contribute most effectively to the growth, development, and life of their country.

In an interview with us, Mr. Afanasenko, the RSFSR Minister of Education, said: "Each pupil should be useful to the State. We do not want young people who are good for nothing. We carry out education in such a way that each pupil participates in productive work while in school. Earlier generations first worked and then studied. Our effort now is to combine study and work." The primary function of Soviet schools is, then, to train young citizens for maximum service to the State.

The Soviet system of education is built basically around the general school. In 1930 the Council of People's Commissars decreed a universal 4-year course for boys and girls starting at age 8. In 1944 the school entering age was lowered to 7, and in 1949, 7 years of schooling was made compulsory in the cities and large rural communities.

In 1950 the general education school[1] began to receive particular attention. Until 1958 the goal of Ministries of Education had been to make 10 years of education universally available in all areas by 1960. (See Appendix B for recent changes.) At the time of our visit our hosts maintained that the goal of 10 years of education had been achieved for all children in cities. Certainly there were indications of vast growth: As of 1950 there were only 1½ million pupils in school grades 8 to 10, and in 1956 there were more than 5 million.

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[1] In the general school or 10-year school which we observed last spring in the U.S.S.R., there are 4 years of elementary school and 6 years of secondary school or a total of 10 grades. Elementary—grades 1, 2, 3, 4; secondary—grades 5, 6, 7, 8, 9, 10. Comparably, we could call the 6 years of elementary school plus the 6 years of secondary school in the United States a 12-year school. In the Soviet Union children begin grade 1 at age 7; in the United States children begin grade 1 at age 6. The length of the school year is approximately the same in the United States and in the Soviet Union. Since Soviet children attend school 6 days a week and the children in the United States attend school 5 days a week, the amount of time ~~they spend in~~ elementary plus secondary education in each country is approximately the same: A 5-day week for 12 years *equals* a 6-day week for 10 years.

In this report we refer to the different years of schooling or grade levels in the Soviet schools as "grades" just as we do in referring to American schools.

The program of general education consists of 4 elementary school years and 6 secondary school years. A single unified curriculum is planned for the elementary or 4-year school, for 7-year (incomplete secondary), and for the 10-year (secondary). (See chart, p. 11.)

The elementary school is a 4-year school, whether it exists by itself in a rural community, whether it represents the first 4 years of a 7-year school or whether these are the beginning years of a 10-year school. Children of elementary school age (7 through 10) attend classes in the same building with older pupils when such groups exist.

All general schools are coeducational, attendance is compulsory through the 7th grade, and attendance records are carefully checked. Classes for all grades are usually conducted in one building. Classes are conducted and textbooks and teaching aids are prepared in the native language of the pupils enrolled. Altogether more than 60 languages are spoken in the U.S.S.R. schools.

Building and Equipment

Most Soviet school buildings are multi-story and similar in design. By our standards, they are drab and unattractive. They are, however, of solid construction and have a moderate amount of space, though not as much as we would consider adequate. In rural areas each school has a garden plot considered as a part of the school facilities; in urban areas most schools have greenhouses.

Because of the devastation resulting from the war, the U.S.S.R. has had to do a great deal of building. In Minsk, for example, 80 percent of the town was almost completely demolished, yet today Minsk is twice as large as it was before the war, with vast new buildings everywhere. Since the Soviets have had a lot of rebuilding to do, they have not been able to build all the schools they might have wanted to. For that reason schools in a great many places are on double shifts.

Soviet leaders and citizens appear to have assigned values to various aspects of life and have decided in which areas they want or need to concentrate on quality. In education they consider laboratory equipment and teaching aids as highly important. We were impressed with the abundance of equipment—charts, maps, three-dimensional teaching aids—and by the quality and quantity of laboratory and shop facilities.

In a school we visited in an industrial section of Moscow, the director told us that it had laboratories for teaching biology, chemistry, mathematics, and physics, as well as a machine building, two reading halls, a library of 25,000 volumes, and special equipment for teaching automobile driving. We visited classrooms and laboratories in a general school in Leningrad where we saw large amounts of equipment and visual aids. For example, in a geography room, there were globes for each pupil in the class and many maps on the walls and in an adjoining storage room. Many of the schools we visited had film projectors and screens, and we were told that those in big cities employ special operators. One extracurricular activity is a film mechanics circle or club in which pupils learn to run projectors and handle films. Pupils who pass an examination may substitute for the school operator.

In a general school in Moscow we were told that if a pupil caused any damage to a building or equipment, he, not his parents, was responsible for repairing it. In the last 6 years no damage has been done to that school. Pupils construct and maintain some of the things they use, and in that way they learn to care for school buildings and equipment.

Schedule

The school year begins on September 1 and ends between May 20 and June 20, with a 12-day winter holiday and a 10-day spring holiday. Children go to school 6 days a week, Monday through Saturday, usually from 8:45 a.m. to 2:30 p.m., though the schedule varies for different grades and different days of the week. There are no study periods as such during the school days.

Since the Soviet pupil puts in 6 days a week at school, in 10 years he spends about the same number of days in school as the United States pupil does in 12 years.

In schools on double shifts difficult subjects are scheduled for the early morning hours, and in many schools academic subjects are alternated with practical work.

Lessons are 45 minutes each, with intervals between classes. Schools on double shifts necessarily operate on a different daily schedule, as is indicated by the following schedule of classes of the general school serving a collective farm near Tashkent:

		1st Shift		
Lesson	*Begins*		*Ends*	*Interval in minutes*
1	9:00	–	9:45	5
2	9:50	–	10:35	10
3	10:45	–	11:30	10
4	11:40	–	12:25	10
5	12:35	–	1:20	10
6	1:30	–	2:15	....

2d Shift

1	2:30	–	3:15	5
2	3:20	–	4:05	10
3	4:15	–	5:00	15
4	5:15	–	6:00	10
5	6:10	–	6:55	10
6	7:05	–	7:50	....

In the RSFSR grades 1 and 2 have 24 lessons a week; grade 3 has 25; grade 4, 27; grades 5–7, 32 lessons; and grades 8 to 10, 34 lessons a week. In grades 1, 2, 3, and 10 the school year is 34 weeks; for grades 4 through 9 it is 35 weeks, with 1 week allowed for excursions.

Enrollment

In 1957–58, there were 214,162 general schools of all types in the U.S.S.R. with a total enrollment of 30,624,900 students, including the 104,500 pupils in the 456 boarding schools, but excluding the 2,088,000 children attending kindergarten. Technical and other specialized secondary schools, including those offering instruction through correspondence, enrolled 2,000,000; and higher institutions, including those offering instruction through correspondence, enrolled approximately 2,000,000. More than 3,500,000 persons were studying part time in higher institutions, secondary specialized schools, general schools for young workers and collective farmers, and schools for adults. (Enrollment figures are for the fall of 1957.)

In 1957, approximately 1,500,000 pupils finished secondary school and were issued school-leaving certificates and 686,000 finished labor reserve schools.

Textbooks

The Republic Ministry of Education provides a series of unified textbooks in accord with the uniform curriculum it requires. (For discussion of the preparation and selection of textbooks, see Chapter IX, The Academy of Pedagogical Sciences.)

Republics may or may not use textbooks prescribed by the RSFSR authorities, but as a rule they use prescribed texts translated into native tongues in mathematics, physics, chemistry, history, etc. Republic editions of local history and language textbooks are frequent, and there is a degree of local option in these fields. The rule for the more basic subjects, however, it is to use the very carefully prepared texts from the Institute of Methods. (See p. 98.) The Institute of Methods also provides other supplementary teaching aids, such as charts, three-dimensional diagrams, and sound films.

The Minister of Education in the Belorussian Republic commented:

> We do not think it necessary to have special courses in physics and mathematics because they're the same everywhere. However, we do study Belorussian language, literature, history, and geography. We study local history and geography along with the history and geography of the U.S.S.R., but textbooks in these four subjects are prepared here.

Prescribed textbooks are relatively inexpensive and sold by local bookstores. Parents must buy those their children need.

Curriculum

The Ministry of Education in each Republic is responsible for the school curriculum. School directors in the various Republics work out plans and send them to their Ministry for reaction and approval. The Ministry suggests plans and proposals, in the development of which it seeks widespread public and professional assistance and opinion from prominent academicians, educators, and scientists. As a result, plans are widely discussed. The curriculum adopted is used in all the school systems; however, some variations are permitted between rural and urban districts and in practical subjects, depending on the type of work prodominant in a particular district. Literature and history courses may also be modified to include local writers and local history. Although these slight variations are permitted, it was our impression that adherence to the official curriculum was common practice.

The standard curriculum offered in the RSFSR schools is shown below:

Grades 1–3: Russian language and literature, arithmetic, drawing, singing, physical education, and introduction to manual training.

Grade 4: History, geography, and elementary biology—largely nature study—are added to subjects taught in grades 1 to 3.

Grades 5–10: Russian language and literature, foreign language, history, arithmetic, algebra, geometry, trigonometry, physics, chemistry, botany, zoology, anatomy, Darwinism, geography, astronomy and drafting, polytechnical training (agricultural and industrial training), drawing, singing, and physical education.

In some places children who enter the first grade have had 4 years of kindergarten training through which they have acquired attitudes and habits that enable them to begin primary schooling immediately. They begin at once to form letters, drawing them in an exact space set off by slanting lines on ruled paper. We were told that children begin to write with pen and ink on the 10th day of school.

Mathematics, Russian language and literature, and physical education are required in all grades. Mathematics and science are particularly emphasized throughout the general school, mathematics primarily because of its relation to other fields of knowledge. Soviet officials recognize that many pupils will never use the algebra and geometry they are required to learn, but they believe such study is good discipline and has great transfer value.

Only one foreign language is required in the basic curriculum (instruction begins in grade 5 and continues through grade 10), and a pupil has a choice of the language he takes among those offered. He may, however, study a second language in an extracurricular language club. Outside the RSFSR in non-Russian speaking Republics, the Russian language is taught along with the native language.

In the 6 years of grades 5 through 10 all students in general schools take a total of 7,196 hours of instruction: 2,499 in the humanities, 3,009 in science and mathematics, and 578 in practical training in agriculture and industry.

Mathematics

In the 4-year primary school, the arithmetic curriculum is designed to carry Soviet children through a program covering the four operations of arithmetic—addition, subtraction, multiplication, and division—real and imaginary numbers, the metric system, the measurement of time, decimals, and the rudiments of geometry.

The mathematics course, which includes arithmetic (grades 5 to 6), algebra and geometry (6 to 10), and trigonometry (9 to 10), is particularly designed for polytechnical education. Work with calculating tables and measuring and drawing instruments is combined with work in practical projects, all of which require the application of mathematical knowledge and habits of thought. Such exercises are tied in with the program without apparent interruption to the system of teaching mathematics. Other courses are integrated with the mathematics course. For example, the drawing course is related to the geometry course through use of theorems and geometrical constructions. Principles studied in different courses are further related in polytechnical training in the school shops.

Science

Science education for Soviet children includes scientific training through in-school and out-of-school programs. It is important to distinguish between the two, but together they represent the sum total of science education in the Soviet general school. (For discussion of out-of-school programs see ch. V.)

The State pays particular attention to the education of scientific workers. It provides for their early years of scientific education and training, encourages them in various ways, and helps them develop in the science field. Pupils without the ability or talent to become scientists use the science training they receive as a base for a polytechnical education which prepares them for industrial work.

Science education for Soviet pupils begins in the kindergarten. There a groundwork for scientific habits in the observation of natural phenomena and plant and animal life is laid before they enter the general school. In the elementary grades courses in biology, chemistry, and physics are comparable to good elementary science courses in U.S. schools.

Although natural science is not taught as a separate subject until grade 4, text material in grades 1 to 3 is designed to give the children some background information. For example, in grade 1 children learn something about the seasons of the year, the trees growing in the U.S.S.R., and domestic animals. In grade 2, they learn something about gardening, garden vegetables, animals, migratory birds, forests, and vegetation. In grade 3, they learn about field grains, orchards, and fruit trees. In grade 4, a class is devoted to natural science, dealing with inanimate nature—water, air, minerals and soil—and class work is supplemented with class excursions and simple practical experiments.

In grade 4 elementary geography is introduced and related to natural science instruction. The lessons in geography in grade 4 help pupils understand how natural phenomena influence agriculture and how man can modify natural forces through irrigation, soil conservation, crop rotation, and other means.

In grade 5 the pupil begins the departmentalized method of study with a special teacher for each subject. The Soviet method of teaching calls for review of material covered in earlier lessons. This method of teaching is emphasized in teacher-training institutes throughout the Soviet Union. In grade 5 the science teacher reviews the science children have studied at the primary level (grades 1–4) and begins to teach them systematically the principles of science as provided for in the curriculum.

Physics.—Natural science subjects occupy an important place in the study plan. Among the subjects of particular importance is physics, which aims at acquainting the pupil with natural phenomena *and the basic principles of production processes.* The italicized phrase points up an important phase of the Soviet educational system. Although the number of hours devoted to science indicates an important emphasis on it, the primary emphasis appears to be on the practical and technological aspects of science. In physics the problems appear to stress specific industrial application.

In grades 6 and 7 pupils become acquainted with principles of mechanics and heat and electrical phemomena. These form the base for the studies to follow in a deeper, systematic course in physics, mathematics, chemistry, and biology. In grades 8 to 10 the principles of mechanics, acoustics, molecular physics, as well as heat, electricity, optics, and the structure of the atom are covered.

Visual demonstration and experiment are broadly applied in physics courses, particularly in laboratory work. The content of physics courses is expanded and emphasized in practical shop work with special projects in machine work and electrical technology. The out-of-class work in physics, particularly in the various technical circles (see p. 60), is of great importance. Such circles are designed to stimulate pupils' interest in technology, develop their construction capabilities, and equip them with practical knowledge and work habits.

Chemistry.—The study of chemistry begins in the 7th grade with elementary instruction on substances and their transformation; on atomic and molecular studies and the principal laws of chemistry; on oxides and the bases of acids and salts; and on the properties of oxygen, hydrogen, the air, and water. After this, pupils prepare for a systematic course in grades 8, 9, and 10, where the work plan calls for a study of chemical elements according to their grouping in the "Periodic Table of Elements," as well as a study of their combinations.

Demonstration experiments are designed to point up the industrial aspects of the subject by emphasizing the chemical basis for obtaining substances in industrial production. For this purpose pupils do laboratory and practical work and go on excursions to local chemical production plants.

Biology.—A systematic course in biology includes the study of botany (grades 5–6) zoology (grade 7), human anatomy and physiology (grade 8), and the principles of general biology (grade 9) which stresses the practical aspects of agriculture. The objectives appear to be to teach pupils the general scientific principles involved in agricultural and livestock production and to instill in them good work habits in caring for animals and plants.

Work outside of class is important in the teaching of biology. Pupils take excursions to agricultural areas and also work on a collective farm or a State farm. In grades 5 to 7, and 9, biology pupils may work with live animals in the experimental area attached to the school. At times, during their summer vacation periods, or in critical labor shortage months, such as harvest time, they may be called for agricultural work.

Astronomy.—In the 10th grade an introduction to astronomy is given to present to the students a picture of the materiality of the universe and to acquaint them with the practical application of astronomy.

Polytechnical influence.—The polytechnical emphasis in the general

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school has modified the content of physics, chemistry, biology, and mathematics. Science subjects, although important in the training of "future" scientists, now have the major function of establishing an educational foundation for a polytechnical system of training which prepares a large number of students for practical industrial work.

General observations.—One of the State's functions in the educational field is to stimulate the publication of useful materials in science and technology. For example, a competition was conducted for the best book on science and technology produced during the period 1956–58. This contest, which was announced in September 1956 by the Ministry of Education, RSFSR, in accordance with a resolution of the Council of Ministers, was organized and managed by the State Publishing House for Children's Literature of the RSFSR Ministry of Education. The prizes awarded were listed as follows:

3 first prizes—15,000 rubles each
5 second prizes—10,000 rubles each
7 third prizes—5,000 rubles each

The objective of the competition clearly indicates the kind of subject matter desired by the State:

> . . . to make possible the formation of new literary works for outside-of-the-class reading by students in science and technology, to indicate the role and significance of science and technology in the life of a person, in socialist construction, in the fulfillment of the 6th Five Year Plan,[2] and for the development of the U.S.S.R. economy—of works which have a bearing on the polytechnical training of the students and the formation among them of a materialistic world outlook.

As indicated earlier, the emphasis on the practical and technological aspects of science and its direct application to industrial problems of production and agriculture are probably the outstanding characteristics of science teaching in the general school. Production needs, or various economic determinants, play an important role in the designing of the curriculum to meet the practical requirements of the State's economy.

Foreign Language Instruction

The *quality* of foreign language instruction that we observed in the Soviet secondary schools was not very different from foreign language instruction in American high schools. However, we were greatly impressed by the extent of foreign language instruction in the secondary schools, where a foreign language, usually French, German, or English, is required of every general secondary school pupil. Continued study of the same foreign language, or a second one, is required at the college or university level.

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[2] This plan which was to run from 1955 to 1960 ended in 1958. In 1959 a 7-year plan was inaugurated to run from 1959 to 1965.

We were also impressed by what we heard of the special language schools for those planning eventually to make language an important tool or specialty, as well as the language institutes for language training at the higher levels.

Several of us observed lessons in English, French, German, and lessons in Russian to non-Russian speaking pupils—totaling 30–40 individual observations. The lessons in foreign languages that we observed appeared to be organized, prepared, and conducted at present with an emphasis on grammar and reading ability rather than on the linguistic or conversational approach. The pupils apparently learn their lessons thoroughly and memorize the materials. Recently an attempt has been made to shift the emphasis to conversation from the beginning of language training in the fifth grade, but only recently. In explaining why children who appeared to answer questions correctly in a foreign language class were unable outside the class to answer simple questions on their own name and age, Soviet educators emphasized that the shift in methods had only recently been made.

Our observation of younger classes supposedly taught by the new method did not reveal any significant differences or greater successes, even in the teaching of Russian to non-Russian students. In an Uzbek Republic school which we visited, an overwhelming number of children appeared unable to speak and understand Russian and consequently could not follow the lesson given in that language. But this general observation must be set against the fact that in each school we visited there were perhaps some students who had mastered the language.

Of all foreign languages, English is the most widely taught in the Soviet Union. In schools requiring English, French, or German, on the average 45 percent of those who study a foreign language choose English; 35 percent, German; and 20 percent, French. In the general school, children at 11 years of age begin the study of a foreign language in grade 5, and from that point on continue through grade 10.

We were told that there were 17 experimental language schools in the larger cities of the Soviet Union. Of these, 8 are in English, 7 in German, and 2 in French. Each of these schools is designed to produce pupils who, at the end of their general school, are fluent in a language. In an English school, for example, children begin the study of English in the second grade of the elementary school when they are 8 years old. Beginning in grade 5 of school, instruction in geography, history, and literature is in English and continues throughout grade 10. Incidentally, the literature taught is that of Britain rather than of the United States.

According to officials at the Ministry of Education in Moscow, classes in Arabic, Chinese, Hindi, and other oriental languages are being introduced in the general school. In one general school we visited, in Tashkent within a few hundred miles of the Indian border, English was being displaced by Hindi; pupils in the second grade began the study of Hindi in the fall of 1957. Children who began English in 1956 in this school will continue with it until they complete the general school at least, but in the future all children will study Hindi. In Alma-Ata, in Kazakhstan near China, two general schools offer Chinese.

In the English classes we observed, instruction was primarily textbook-centered. Pupils translated from Russian into English or read a story aloud and answered the teacher's questions about the content. If the story was about Natasha's day or Ivan's, the teacher's questions might be, "When did Natasha rise? What did she eat for breakfast? When did she go to school?"

In the school libraries we saw some translations in Russian of selected American literature, including books by Jack London and Mark Twain. Individual teachers mentioned Poe's "Annabelle Lee" or poems of Longfellow, Whittier, or Frost. The book most frequently mentioned was written in 1897 by Voynich, entitled *The Gadfly*.

As we arrived at schools we were usually greeted by students with flowers and a welcoming speech in English. Almost invariably the speech expressed the wishes of the children and young people to send greetings to children and young people in the U.S.A. and added, "And tell them we want peace." The greeting of a sixth grade pupil in Kazan School No. 99 was typical:

> Our dear guests: In the name of the pupils of all our schools I greet you. We Soviet pupils are studying at school very persistently because our great teacher, Lenin, said to us: "Study, study, and study," and we fulfill these Lenin's words. In the name of the pupils of our school I ask you to give our Pioneer and ardent regards to all the children of the United States of America.

Even one kindergarten child presented such a greeting in English.

In the general school children and young people had the same problems in speaking as similar age groups in the U.S.A. would have if they departed from the vocabulary of the textbook. But at the university level students seemed to have developed fluency in speaking and genuine understanding of what was said to them. On visits to pedagogical institutes or to universities we were accompanied by students, sometimes several hundred, who wished to speak with us in English. During the intermissions at the opera or ballet, we were surrounded by large groups of young people asking, "Do you see our Russian movies? read our Russian literature? hear our opera? *and* how many Americans are studying Russian?"

Teachers of English frequently asked, "How is my pronunciation?" They had learned English in the general school, at a pedagogical institute, at the university, by correspondence, or perhaps by a visit to a foreign language institute in Moscow or Leningrad, or by some combination of these methods. Their pronunciation was relatively good and naturally there was a wide variation in the quality of the English we heard spoken.

One teacher of English at a Pioneer Palace told us that she had studied English by correspondence for a 5-year period with a conference at the university for 1 month each summer and for 2 weeks during the winter. All of a teacher's travel and maintenance expenses are paid by the State for attendance at such conferences, as they are termed. This teacher spoke English as well as those who had studied the language directly.

Health and Physical Education

Considerable emphasis is put on health and physical education in Soviet schools. As curriculum plans No. 1 and No. 2 indicate (see tables 2 and 3) physical culture is required in the general school, 2 classes a week in all grades under plan No. 1, and 2 classes a week in grades 1–7 and 3 classes a week in grades 8–10 under plan No. 2. Physical culture classes enroll both boys and girls in the same classes. In addition to the physical training required in school, thousands of boys and girls receive physical training by participating in summer camps, tours, and many sports competitions such as field, track, swimming, skiing, and basketball. The State sponsors many of these activities and provides children's playgrounds.

Each school employs a physician for 3 hours every day and a nurse full time. In one of the schools we visited we were told that the doctor gives injections, including injections for polio, to pupils up through grade 7. Although we were not prepared to make an expert report on the health of Soviet children, the ones we saw looked healthy, clean, and well cared for.

Polytechnical Education

A premium is placed on work in the Soviet Union, work for the building of a socialist State. Everyone is employed, men and women and many young people; everyone is expected to do his part in accomplishing the goals of the State. The aim of socialist production is the maximum satisfaction of the steadily growing material and cultural requirements of society as a whole. The program of education which we observed reflects this aim; work experience and the development of wholesome attitudes toward work undergird the entire educational system of the Soviet Union.

In 1956 the First Secretary of the Central Committee of the Communist Party called for an uninterrupted advance in the technique of production as a task of prime importance. He said:

> A big shortcoming of our school system is that the instruction is divorced from life to some extent; those who finish school are insufficiently prepared for practical work. . . . The secondary school curriculum should be revised to include greater production specialization, so that boys and girls who finish the general or 10-year school have a

Table 2.—Curriculum Plan Number 1

Major program of the school of the Ministry of Education RSFSR: Educational plan of the elementary, 7-year, and secondary school

[Two figures for one grade in a column indicate number of hours in each semester]

No.	Name of subject	Number of hours a week for grades—										Total hours	
		I	II	III	IV	V	VI	VII	VIII	IX	X	By the week	By the year
1	Russian language and literature	13	13	13	9	9	8	6	6/5	4	4	84. 5	
2	Mathematics	6	6	6	6	6	6	6	6	6	6	60	
3	History				2	2	2	2	4	4	4	20	
4	Constitution of the U.S.S.R										1		
5	Geography				2	3	2	2	2/3	3		14. 5	
6	Biology				2	2	2	3	2	1		12	
7	Physics						2	3	3	4	5/4	16. 5	
8	Astronomy										1	1	
9	Chemistry							2	2	3	3/4	10. 5	
10	Psychology										1	1	
11	Foreign language					4	4	3	3	3	3	20	
12	Physical culture	2	2	2	2	2	2	2	2	2	2	20	
13	The art of drawing	1	1	1	1	1	1					6	
14	Sketching							1	1	1	1	4	
15	Singing	1	1	1	1	1	1					6	
16	Work and practical exercises	1	1	1	1	2	2	2	1	1	1	10	
17	Practice in agriculture with agricultural machinery and in electrotechnics								2	2	2	6	
	Going on excursions												188
	Total	24	24	24	26	32	32	32	33	33	33	293	

NOTES

1. From the general number of hours, given over in grades I–III to the Russian language, 2 hours a week is allotted for teaching penmanship in grade I, and 1 hour a week in grades II and III.

2. The course in the Constitution of the U.S.S.R. was not taught in the 1957–58 school year to grade X, since the students in grade X had already had the course in grade VII; in this way 1 hour a week in grade X was released in the 1957–58 school year for the improvement of the knowledge of those studying in the Russian language or other courses—at the discretion of the pedagogical council of the school.→

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> good general education opening the road to a higher education, and at the same time are prepared for practical activity, since no small number of those leaving school will at once start to work in various branches of the national economy.

Soon after the Secretary's statement a change in the general school program was announced—a change which represents a new emphasis on polytechnical education. In Minsk, the Minister of Education of the Belorussian Republic, told us that changes were in prospect for the curriculum of the school. In substance the Minister said:

> Primary and secondary education are too theoretical. Pupils need practical preparation for life. The present curriculum was fine when its objective was only preparation for a higher education, but it is now realized that most graduates go to work in industry or in agriculture and the curriculum should be changed to serve them. Thus polytechnical education and preparation for work are to be combined; that is, general principles of industrial production and proper working habits will be a part of the instruction, and each pupil should be skilled in some special trade, including those who will go on to higher education. The schools are teaching plant breeding, the mechanization of agriculture, cattle breeding, construction of machines, mechanics of metals, motor cars and tractors, and other courses related to the attainment of this new objective in grades 8–10, inclusive.

During the last few years the Soviets have been planning, experimenting with, and now are gradually adopting what they call a polytechnical program, (see plans No. 1 and 2, tables 2 and 3). The polytechnical program[3] (see plan No. 2, table 3) was used in 25 percent of the Soviet schools in 1957–58 in addition to the general education program, which was reduced slightly. In 1958–59 the plan will be followed in 50 percent of the schools. Soviet officials said that it was an improvement over the old curriculum but represented only another stage in their efforts to perfect the curriculum. In speaking of program reform, they said that it should not reduce the level of general education and that it should provide for better and higher education and lead to more attention being given to training in special skills.

Curriculum Plan No. 2 introduces handicraft beginning in grade 1, woodworking in grade 5, metal work in grade 7, study of machines in

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[3] The latest changes are described in appendix B.

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3. Beginning in the 1957-58 school year educationally productive practice has been introduced:

(a) In agriculture during the transition from grade VIII to IX for pupils in urban and rural schools.

(b) During the transition from grade IX to X for the pupils in rural schools in agriculture; and for the pupils of urban schools in industry.

If it is impossible to organize educationally productive practice in industries for grade X, practice may be conducted in agriculture.

The length of the practice in every grade is from 2 to 4 weeks, depending upon local conditions, at 4 hours a day.

Table 3.—Curriculum Plan Number 2

Major program of the school of the Ministry of Education RSFSR: Educational plan of the elementary, 7-year, and secondary school for proficient control in the 1957–58 school year

[Two figures for one grade in a column indicate number of hours for each semester]

No.	Name of subject	Number of hours a week in grades										Total hours		In addition to yearly hours in schools		Total year's hours in schools	
		I	II	III	IV	V	VI	VII	VIII	IX	X	By the week	By the year	City	Country	City	Country
1	Russian language and literature	13	13	13	9	9	8	6	5	4	4	84	2, 856			2, 856	2, 856
2	Mathematics	6	6	6	6	6	6	6	6	6	6/5	59. 5	2, 023			2, 023	2, 023
3	History				2	2	2	2	4/3	3/4	4/5	19. 5	663			663	663
4	Geography				2	3	2	2	2/3	3		14. 5	493			493	493
5	Biology				2	2	2	3	2	1		12	408			408	408
6	Physics						2	3	3	4/3	4	15. 5	527			527	527
7	Astronomy										1	1	34			34	34
8	Chemistry							2	2	2	4	10	340			340	340
9	Foreign language					4	4	3	3	3	3	20	680			680	680
10	Physical culture	2	2	2	2	2	2	2	3	3	3	23	782			782	782
11	The art of drawing	1	1	1	1	1	1					6	204			204	204
12	Sketching							1	1	1	1	4	136			136	136
13	Singing	1	1	1	1	1	1					6	204			204	204
14	Work (classes I–IV) and practical exercises in school workshops (classes V–VII)	1	1	2	2	2	2	2				12	408			408	408
	Autumn and spring work in the school's practice area in classes V–VII and educationally pro-																

	ductive practice upon the termination of the school exercises in classes V–VI													102	138	102	138
15	Fundamentals of production								3	4	4	11	374			374	374
	Educationally productive practice upon the termination of school exercises in classes VIII+IX													192	192	192	192
	Going on excursions													191	191	191	191
	Total	24	24	25	27	32	32	32	34	34	34	298	10,132	485	521	10,617	10,653
	Optional (at the choice of those learning) practical courses								1	2	2	5	170			170	170

NOTES

1. In grades I, II, III, and X the number of school weeks in the year is 34, and in grades IV through IX, 35; of the total in grades IV through IX, 1 week—6 school days in the year—is allotted to making excursions.

2. Out of the total hours devoted to the Russian language, 2 hours per week is allotted to penmanship in grade I, and in grade II and III, 1 hour a week is usually required.

3. The course on the Constitution of the U.S.S.R. usually required in grade X was not conducted in 1957–58 since students in this school year in grade X had already had the course in grade VII. Therefore, from the 5 hours a week, devoted in the second half year in grade X to the history of the U.S.S.R., 1 hour was used at the discretion of the director of the school.

4. In grades V, VI, and VII 22 hours a week is allotted in each for fall and spring work at the school practice area.

5. In addition to practical exercises and educationally productive practice, conducted in grades V–VII and VIII–X during the school year, there is provided for:

a. Educationally productive practice in urban schools—at the school's practice area—at the transition from grade V to VI—6 working days, and from grades VI to VII—6 working days, at the rate of 3 hours a day; in the rural schools, the school's plot on a collective farm, on the transition from grade V to VII—12 working days at the rate of 3 hours a day.

b. Educationally productive practice in agriculture upon the transition from grade VIII to IX for pupils in the urban and rural schools for 24 working days at 4 hours [illegible]y.

c. At the transition from grade IX to X, educational productive practice in agriculture for pupils in rural schools—24 working days, and in industrial establishments for pupils in urban schools for 24 working days at 4 hours a day.

6. For teaching pupils in grade X practical driving of a motor car (tractor) there is devoted 10 school hours for each pupil.

grade 8, basic principles of industry and some work in factories in grade 9, and electrical technology and internal combustion engines in grade 10.

The principal difference between plans No. 1 and 2 is the new polytechnic emphasis, the combination of education and labor. Plan No. 2 eliminates psychology, but the other subjects are the same as under No. 1. From the grades 3 through 7 the amount of time pupils devote to labor is increased. Fundamentals of agriculture and industry are included in the grades 8, 9, and 10 in plan No. 2. (This is called Practicum in Agriculture, Industry, and Electrotechnics in Plan No. 1.) The new course in plan No. 2 will give pupils a more detailed knowledge of the principles of agriculture and industry and more agricultural and industrial experience. Plan No. 2 provides twice as much time for this new course as was provided for the "practicum" in plan No. 1.

In city schools 4 weeks of industrial practice, in industrial or construction enterprises, is provided for pupils in the 8th and 9th grades; in rural schools 4 weeks of practice on collective or State farms is provided for pupils. Both boys and girls take this work. Plan No. 2 allows pupils to elect some practical courses, a choice they did not have under plan No. 1.

In 50 schools last year the U.S.S.R. introduced an even more advanced polytechnical program, which requires pupils to take an 11th year of school. The principal difference between plans 2 and 3 is that in the 10th and 11th grades of the 11-year program pupils spend 3 days a week at work and 3 days in school. In other words, in the last 2 years they spend half their time in a factory, on construction projects, or on farms.

The Government of the Soviet Union has a number of reasons for revising its curriculum. It wants all people to have a wholesome attitude toward labor, to be able to relate theory to practice, to be prepared to do a day's productive work on the farm or in a factory. It is looking toward further industrialization of the country and will need additional skilled manpower. Furthermore, with the extension of compulsory 10-year education, larger numbers of pupils are graduating from secondary schools than can be admitted to higher institutions. (Admission to higher institutions is governed by the needs of the country for specialists.) The polytechnical program provides a transition for pupils from school to work.

Mr. Khrushchev said several months ago that pupils ought to work for 2 years before going to college. There are indications that he had several reasons for his statement, including the fact that the universities cannot now take all who apply for admission and most are not planning to expand. Unlike the situation in the United States, the number of children born in the U.S.S.R. during the war was smaller than before and after, and pupils graduating from general schools now are still in the larger prewar group, but the smaller group will be coming along shortly. If officials can persuade college-age students to work for 2 years, they will be able to filter some of them into the universities and institutes at a later time when

Table 4.—Experimental Curriculum Plan No. 3

Program of the Ministry of Education, RSFSR

Subject	Classes per week in grade—		
	IX	X	XI
Russian language and literature	3	2	3
Mathematics	4/5	3	4
History	3	3	2
Economic geography	2	1	
Biology	1		
Physics	4/3	2	2
Astronomy			1
Chemistry	2	2	2
Foreign language	2	2	2
Drawing	1	1	
Physical training	2	1	
Basis of industry		1	2
Practical and theoretical training in industry	12	18	18
Electives: sports, literature, and other subjects	3	3	3

they are less crowded. However, officials are not now requiring all students to work for 2 years before entering the university. The University of Moscow, for example, admits from 40 to 50 percent of its students (medal winners) directly from the general school. In general, these are the students going into mathematics, physics, chemistry, and other sciences.

The necessity for experimentation to achieve the purposes mentioned above led to plan No. 3, which puts even more emphasis on labor. The Government expects pupils trained under it to be better qualified to hold skilled jobs than those trained under plan No. 2. Pupils will receive half pay while working in industrial plants, and once placed they will be paid according to production quotas. The Ministry has not imposed the plan on the schools, but if it proves successful and the Council of Ministers decides to adopt it, it will then be followed universally. Schools experimenting with the plan have applied it sometimes in the 9th, sometimes in the 10th grade. Last year pupils in the experimental schools who did not wish to participate were not required to do so but were allowed to complete the regular program.

Under curriculum plan No. 3 the program for the first 8 years is about the same as under plans 1 and 2; in the last 3 years time in industry is increased. In the 9th grade a pupil spends 2 days in industry instead of 1; in the 10th grade he works 3 days in industry whereas under plan 1 he works none. Since study and class time is cut under plan No. 3, an 11th year is added to the school term and in that year a pupil spends 3 days in industry and 3 in school.

We were told by a Ministry official that plan No. 3 would not reduce the level of secondary education, "because" he said, "the requirements for an educated person are growing." As the program is developed, however, pupils in grades 9 and 10 spend nearly half of their time in industry and in grade 11, the year added to restore the balance, one-third of their time.

In Alma-Ata we visited a school which was following experimental Plan No. 3. As we approached the school we were greeted in English by a 6th-grade boy who presented flowers to us. We exchanged a few words with him and thought that he had a pretty good command of English for a pupil who had only studied the subject in grades 5 and 6.

Quoted below are some comments made by Alma-Ata school officials and some of our own notes and observations.

Notes and observations of delegates

★*Enrollment*, 1,306 pupils.

★*Staff*, total staff 103, including 63 teachers (4 teachers are Party members).

★Last year 50 percent of the 7th grade pupils continued their studies in technicums; 72 percent of the 10th grade graduates went to work in plants and 28 percent went to institutes or universities. Usually only a few pupils go to technicums at the end of the 10th grade.

★Children can work in plants only after they are 16 years old. This is a Government law.

★363 pupils are members of Komsomol, the Young Communist League.

Comments of Alma-Ata officials

★Since polytechnical education has been introduced, children make and repair school equipment. They also make visual aids, tables, chairs, and other things. As a result, children are more careful of school equipment.

★The school has a construction committee made up of students with a student director in each shop.

★Labor lessons begin in the 1st grade. In the 1st, 2d, and 3d grades work is done with paper and clay; in the 4th grade work is done in the school wood and metal shops.

★Pupils have machine work in the 8th grade. They have elements of industry in the 9th grade and once each week have industry practice for 4 hours. At the end of the school year they have industrial practice for 2 weeks in plants, such as machine repair plant—this helps greatly in the study of physics. At the end of the 8th grade, children have agricultural practice—this helps greatly in the study of biology.

★The number of lessons in general subjects remains the same as in other general schools; this is done by adding 5 hours more here than in a general school where pupils have about 30 hours.

★A few months ago the curriculum was examined. The textbooks are now somewhat shorter than they were before; therefore more time is available for polytechnic emphasis. The time spent on review of some subject matter at different levels has also been shortened.

★We feel that the results in general education are no worse than under the old program. The new program provides opportunity for the application of what is learned.

★10th-grade mathematics content: Inequalities, complex numbers, higher equations. Trigonometry is taught in the 9th grade.

★Polytechnic courses in the 5th and 6th grade are the same for both boys and girls; variation is in the circles.

★Foreign language: 5 classes in the Chinese language are taught here. Last year English, French, German, and Chinese were taught; 55 percent of the pupils were studying English.

Homework

The maximum amount of homework is fixed by the Republic Ministries of Education. Daily assignments are made, varying from grade to grade and by number of lessons and requiring from 1 to 3½ or 4 hours to complete. No homework is assigned for Sunday.

In answer to a question about homework, one school director said, "Small children should not spend too much time in homework. They should be taught in class. A small amount is better up to the 6th grade. Some teachers think it is easier to give homework. Teachers should teach in classes." He recommended no homework in the 1st grade, 1 hour 15 minutes in the 4th grade, 4 hours in the 10th grade, and he added: "The better the teacher, the less homework is required."

Homework is checked daily and marked on the same 5-point scale as classwork. We noticed that pupils' copy-books were done in ink, in very good handwriting.

In a Kazan boarding school with grades 1–6 we asked the teacher of a 6th-grade literature class whether the children had reading difficulties. She said they did not and seemed to consider our question a little foolish because children had learned to read long before 6th grade. She also told us that children in this school read, on the average, 100 books a year, that the curriculum required a minimum of 30 (books of 150–300 p.) but that some children read up to 150 books. They report on the books in class, in reading conferences, and sometimes at evening parties.

In noting the number of hours of homework assigned, one should remember that Soviet pupils go home when their classes are over and have no free periods or study periods. However, since most Soviet pupils live fairly close to the schools they attend, they may go back in the evenings to study. Schools are kept open until 9 or 10 p.m., some until 11 p.m. School libraries and reading rooms are open, and it is our impression that teachers are often available to give pupils special help.

Marking

A uniform marking system is used in U.S.S.R. educational institutions of all types and levels. Daily recitations and homework assignments are graded by teachers and assistants, but the teacher's marks are entered in both the pupil's and the teacher's record books. A mark of 5 is considered excellent, 4 good, 3 passing, 2 unsatisfactory, and 1 failing. In order to pass, a pupil's marks must average 3 in each subject. Pupils who receive a 2 in one or two subjects may take repeat examinations in the fall after completing a summer reviewing session. In addition to examinations given in each school grade, oral and written examinations prepared by the Ministry of Education are given in selected subjects to pupils at the end of grades 7 and 10.

Examinations

In understanding the educational system of a foreign country, examinations are usually illuminating since they tend to reveal the philosophy and values and to indicate the standards of attainment. The examinations used in the U.S.S.R. give some indication of the objectives of Soviet education, although the nature of their examinations makes it difficult for us to get a clear picture of the standards achieved.

Soviet examinations seem strange to Americans, even to those familiar with British or French systems of education. Schools in the U.S.S.R. rely on oral examinations of a rather special type, and although they use written examinations to some extent, these, too, are different from the essay examinations that we are familiar with. Furthermore, they do not use modern testing methods, which we would expect them to find particularly valuable. They use objective tests in a few psychological laboratories, but do not use them for the identification, guidance, or placement of pupils as we do in the United States. The reason seems to be that in minimizing the significance of inheritance, as compared to environment and training, Soviet leaders have found it necessary to banish the concept of the IQ and with it all tests resembling intelligence tests.

Examinations in Soviet schools are used mainly to audit achievement, since the kinds of examinations used are not really measuring instruments. Through examinations, authorities satisfy themselves that pupils have learned the minimum essentials of important courses. The aim of the Soviet educational system at the elementary and secondary school levels is to give, not differentiated education, but exactly the same education to all pupils regardless of their special abilities, and examinations are devised and administered to make sure that this is accomplished.

Another aspect of the Soviet examination system which seems strange to us is that virtually all of the students permitted to take the examinations pass. In the schools we visited it was rare to find that in the previous year a single pupil had failed his examinations. The examinations are, therefore, not measuring instruments designed to determine the degree of achievement of different students (although they are graded 5, 4, 3, and, in exceptional cases, 2 and 1), but rather a means of motivating them by providing a goal and of judging the teachers, who are held responsible if any pupils fail. To some extent teachers are successful in having all pupils pass because they can prevent those with a yearly average of less than 3 from taking examinations. So far as we could ascertain, however, only 1 or 2 pupils in a class of 30 are likely to be prevented from taking the examinations.

Examinations prepared by the Ministry of Education were formerly given at the end of each grade, but gradually this program, which was very time consuming because of the individual oral examinations, has been reduced and now they are given only at the end of the 7th grade and at the end of the 10th grade.

In the past graduates of the general school who received gold or silver medals for outstanding work were not required to take university entrance examinations for admission but it is now thought best for all to take them.

The regular examination[4] at the end of the general school covers the following subjects:

1. Russian literature
2. Composition on a literary theme
3. Soviet history
4. Mathematics, including algebra and geometry
5. Chemistry, organic and inorganic
6. Physics
7. A foreign language

All are oral except Russian literature and composition. Examination questions are sent to the school in an envelope with the seal of the Ministry of Education on it. The envelope is opened at the beginning of the examination.

The unusual features of Soviet examinations can perhaps best be explained by describing one oral and one written examination. In the 10th grade examination in solid geometry, which is oral, a class of 30 is divided into 2 sections of 15 each. All 15 pupils go into a classroom where the teacher of the class, the director of the school, 1 or 2 other

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[4] According to an RSFSR Ministry of Education bulletin issued in March 1958, a written examination on the Russian language and a written examination in algebra and arithmetic would thereafter be required of all children finishing the 7-year school.

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teachers, and sometimes representatives of the educational authorities of the city sit as an examining board. At a general school in Kazan the principal told us that at the oral examination the teacher, the director of the school, parents, and other citizens may be present with the approval of the director.

Face down on the table at which the board sits, there are from 20 to 25 "tickets" ("bilety" in Russian). Each ticket contains three questions: two of them are standard proofs or problems and the third a problem that, while not new in type, is perhaps a little different from those assigned during the year. All three questions are on a particular topic, and each of the 20 to 25 tickets covers a different topic. Pupils therefore have to be sure that they have command of all of the topics since they can never tell which set of questions they may be called upon to answer. Fortunately for them, several months before the examinations, the Ministry of Education publishes a pamphlet listing the topics to be covered, and for some examinations specifically stating the first two questions. Only the third problem or question remains in doubt.

At the beginning of the examination 4 or 5 pupils are given the opportunity to draw their "tickets." Then they go back to their desks and work out answers to the questions. When the first pupil is prepared, he goes to the blackboard and writes out his answers; he then explains his work to the examiners and answers any questions they may ask. After he has covered the three questions on his ticket, the members of the examining panel may ask him other questions on any topics they wish, but we gather that this privilege is not exercised to any great extent. Meanwhile, pupils 2, 3, and 4 have had considerable time to prepare their answers, but they have had also a good deal of distraction. Pupils 13, 14, and 15 have to sit through a long morning of waiting until their turns come up, for not until pupils ahead of them have finished do they have a chance to draw their tickets and go to work on them.

This, in brief, is the way in which a typical oral examination is conducted, and, as can be readily inferred, it puts great pressure on the pupils to have complete command of the examination topics listed by the Ministry of Education. How broad the coverage is in comparison with the course syllabus and the textbook remains a matter for further study, but our impression from an inspection of the "tickets" is that all of the important topics are covered. Soviet schools focus their attention on mastery of what they regard as the minimum essentials, but their examinations offer little incentive to students to study more than the minimum essentials.

At the end of each pupil's examination the panel members individually put down a grade, compare notes, and reconcile any differences. The pupil's grade for the year is based on his examination grade and his daily work; however, his grade for the year is never higher than his examination grade. In most cases the two are the same, but if the examination grade is higher, the daily grade and the examination grade are averaged.

The examination in Russian literature at the end of the 10th grade is a written examination. In it all pupils are given the same questions. However, each pupil has to answer only one of the three questions he is given. In one examination which we observed the three questions or subjects for discussion were as follows:

1. In what way is the poetry of Mayakovsky close to us or connected with our lives?
2. Discuss "*Eugen Onégin* by Pushkin as an encyclopedia of Russian life and folklore in its highest degree." (Belinsky)
3. Discuss builders of new life in the works of Sholokhov (with particular mention of virgin lands).

On one of these three rather general topics each pupil had to write an essay of not more than about 8 blue book pages. Surprisingly enough, he was given 6 hours in which to do it—the examination began at 9 o'clock in the morning and continued until 3 o'clock in the afternoon. It was customary, perhaps mandatory, for each pupil to write a first draft and then, having worked over it very carefully, to copy it before the end of the examination. It would be interesting to know whether allowing an apparently excessive amount of time makes for better measurement of writing ability. But certainly limiting each pupil to one question casts some doubt on the reliability of the examination. However, the Soviet objective here again may be merely to determine whether pupils have met a certain minimum standard of literary interpretation and writing.

The general purposes and uses of examinations in U.S.S.R. schools seem quite clear, but a more intensive study is needed to appraise the standards of Soviet education for each examination. A careful analysis would have to be made of the course syllabus, the textbook, the topics for examinations listed by the Ministry of Education, the problems on the "tickets," and a random sample of the pupils' responses. In addition, it would be important to know just what proportion of an unselected group of pupils of comparable age was completing the work in the course and taking the examination. Different standards would, of course, be expected if 10 percent, 50 percent, or 80 percent were taking the examination.

Motivation

The curriculum described in the preceding pages is required of all students in the general school. In school after school we were told that all pupils except defectives were able to take the full 10-year program. For example, an official of a general school in Moscow told us that there were no poor pupils in his school, that all had good marks or better by the end of the year. This school, like all other general schools, makes no provision within the curriculum for the exceptionally bright or gifted child. Pupils who make excellent marks are supposed to help the slower pupils, who also receive individual help from the teachers.

Although Soviet officials maintain that all pupils are able to complete the curriculum prescribed, an important question remains unanswered: How effective is Soviet education for the ablest pupils—the ones who are likely to be the creative leaders of the U.S.S.R. in the years ahead? Will teaching which is aimed at the below-average pupil, which spells everything out so clearly that proofs seem hardly more than a matter of memory, which emphasizes doing things exactly as the teacher has prescribed, kill the imagination, the originality, and the creative ability of pupils who have a potential for being the innovators in scientific and other fields in the future? Will the system kill the creative spark of the ablest pupils and thus prevent Soviet society from producing great scientists and leaders in other fields?

In considering these questions, we should remember several points: First, pupils have opportunities to work on independent projects and develop their creative ability through extracurricular activities in "circles." (See p. 60.) Second, outstanding pupils sometimes come under the wing of a professor and are encouraged from an early age to develop more rapidly than they otherwise would. Third, there are the Olympiads or competitions in virtually all fields now. The Mathematics Olympiad originated many years ago at Leningrad University. Today there are Olympiads at the school level, the district level, the Republic level. The ablest students from all over the country do advanced work and then compete for the prizes in them. Consequently, there is an incentive for the really outstanding pupils to go beyond the formal academic program.

Other general motivating influences include the system of examinations used, the close cooperation with the family, and the constant encouragement to compete with other countries, particularly the United States, in sports, agriculture, industrial production, and other fields. Besides the methods devised in Moscow for use throughout the country, there are others used perhaps by a single school or city. For example, we visited a school named for two former pupils, a brother and sister who were killed in the war. We were told that the girl was recognized as a Soviet heroine, and we saw plaques to both of them in the classroom where she studied. Each year the best class is given the privilege of using that particular classroom the following year—an interesting motivational technique. As a second example, in Moscow we saw a large bulletin board with many pictures on it, and we were told that the pictures were of people in all walks of life who had been honored for doing exceptionally well in their work.

It can be readily understood that Soviet pupils are highly motivated in these and many other ways, but the most important motivating force is the significance attached to education in the U.S.S.R.

Individual Pupil Records

The general school keeps a continuous record on each pupil which includes: School administrative record, doctor's record, parents' characteristics, pupil's marks, 7-year certificate, and statements by teachers. When a pupil moves to another school or goes on to a university or other higher institution, his record is sent along. The record is not confidential but is open to the pupil and his parents.

At a general school in Leningrad, which has kept permanent pupil records for 92 years, we were shown, at our request, one pupil's record. We found that the school provided large folders for cumulative records with forms for detailed information. The one we saw contained the doctors' findings, anecdotal material, a year-by-year report by teachers, a 7th year competitions certificate, and such comments as the following: "Has studied excellently"; "is a member of the Young Communist League"; "discipline excellent"; "is polite and obedient"; "reads a great deal"; "chairman of the pupils' executive committee for the school"; and, "schoolmates respect him."

When we asked whether other agencies request information from the records, we were told: "First of all, parents are interested; the director reads it. The Pioneer organization or the Young Communist League may ask to see it."

A copy of the official birth record of each pupil is required, and it becomes a part of his permanent record. When a child first enters school, information on his parents is recorded.

Discipline

There are 20 rules of behavior for Soviet children, and they are enforced by the children themselves. Rewards for excellence in studies, work, and behavior as well as punishments for infraction of rules are set by the Republic Ministries of Education. Corporal punishment is prohibited. Forms of punishment permitted are, in order of seriousness: (1) Reproof by the teacher, the director or—for more serious offenses—the Pioneer leader; (2) withdrawal of a pupil's Pioneer tie; and (3) denial of the privilege of working. Pupils are not disciplined for falling behind in their studies; instead they are helped by their teachers or by pupils scoring excellent marks.

When we asked the director of a boarding school in Alma-Ata about the problems of discipline, she told us that on rare occasions of a pupil's "breaking the schedule," the matter was handled by talks by persons at various levels up to the school director. In extreme cases where such punishment does not suffice, a pupil may be dropped from the Young Pioneers or be denied the privilege of working about the school at such jobs as cleaning or serving on duty in the classrooms. According to the director such procedure seemed to be sufficient deterrent.

Young Pioneers and Komsomols cooperate with the schools in maintaining good conduct and in handling disciplinary problems. Both groups grant awards for outstanding achievement. In each school a committee elected by the pupils works closely with the Komsomols. The Komsomols publish the school wall newspaper, which can be used to honor or to censure individual pupils. Classes also prepare wall newspapers, each page of which is put up separately with considerable decoration to form an attractive display.

It is likely that a number of conditions in Soviet schools keep down disciplinary problems—the fixed schedule, the heavy workload, the short hours pupils are in school, the pledge of the Pioneers (see p. 60), the attitude of the public toward education, and the constant reminder of the rewards for diligence and good behavior, as is indicated in the discussion of motivation and of extracurricular activities.

Special Education

The Government maintains several types of special schools, including schools for the blind and partially sighted, for the mentally retarded, the physically handicapped, and children in poor health. Figures on the total number of schools and enrollment are not available, but a few isolated figures may give an indication of the effort being made and pattern of organization.

In the RSFSR there are 41 general schools and ten 7-year schools for the blind, and 7 schools for the partially sighted, with a total enrollment of 5,000. All are boarding schools; the general schools are located in large cities and the 7-year schools in rural areas. We were told that congenital blindness was not the greatest cause of difficulty of pupils presently attending these schools, that a large number of children were blind as a result of injuries received during World War II, and that consequently the number of such schools was decreasing each year.

Children in poor health are sent to special schools called "forest schools," organized in places with particularly good climates. Insofar as possible, classes in forest schools are conducted out of doors. In 1957-58, 44,000 children were in forest schools in the RSFSR.

Our opportunities to observe special education were limited, but during our visit to the Academy of Pedagogical Sciences in Moscow we did get some information on the subject. We learned that one of its institutes, the Institute of Defectology, is concerned with the education of all types of exceptional children and that it operates two schools for defective children.

As the Soviets see the problem, the job is one of identifying such children, diagnosing their difficulties, and then providing pedagogical and medical treatment. Dr. Luria, who visited the U.S.A. 25 years ago and who spoke English fluently, told us that he agreed with recent findings of the British that in the past approximately 60 percent of the children who were hard of hearing were to be found in schools for the feeble-minded because of incorrect diagnosis. For this reason, Soviet educators consider the medical aspects of work with exceptional children as particularly important and cooperate with the Academies of Science and Ministries of Health. They believe that the feeble-minded child has suffered brain damage but that all people can develop compensations for their handicaps.

The one school for exceptional children that we visited was a school for the blind in Moscow, in a rather poor neighborhood, where old houses had been torn down and others were still to be demolished. The director told us that eventually additional space would be available for school gardens. Before the revolution, it was a charity school, but now, of course, there are no charity schools. It is a boarding school, with 210 girls and boys enrolled. They may go home on Sundays if they and their parents wish. The children are about equally divided between the primary grades 1-4 and the secondary grades 5-10. For the younger group the school day is 4 hours and for the older girls and boys, 6 hours.

Although it is labeled a general or 10-year school, the pupils actually stay for 11 years because of their handicaps. Classes are small, with not more than 10 to 12 children in each group. The school has two purposes: (1) To give the boys and girls a general education, and (2) to teach them an industrial skill by providing experiences in various shops, beginning with the 6th year. Shop work includes bookbinding, locksmith work, typing, and accordion playing, and other skills. As in other schools, there is an increasing emphasis on polytechnic education. Graduates find work easily.

The school tries to provide opportunities for the children to mingle with normal children of their age group, and the teachers and the director encourage the children to participate in circles of many types at the Pioneer Palaces. The school has its own Pioneer Camp in the country where the children spend 2 months during the summer vacation.

The pupils are either entirely blind or partially sighted with at least 5 percent vision. We saw some of them walking arm in arm in the corridor during the interval between classes, in groups of three with a partially sighted child serving as pivot for such groups.

We visited classrooms throughout the school, beginning with the first grade. Children learn to read braille very quickly, and each child in these classes had an individual desk with a big compartment for books in braille. Many of the teachers and some of the boys and girls spoke English. The school library was a pleasant, comfortable room with many magazines and books in braille.

Classes were impressive, particularly in physical education. We saw some of the pupils, probably in grades 8–10, give a physical education demonstration in which they exhibited considerable skill on the horses, in tumbling, and in using parallel bars. In one classroom where we spent some time, children were working with a new system of drawing devised by a teacher in the school, N. Semerski, who calls the method "typhlography." (Mr. Semerski explains his method in an article in the December 9, 1957, issue of the *Unesco Courier*.) Its main feature is a picture of about 9 by 12 inches which can be easily duplicated in plastic so that each child may have a copy. As the child passes his hands over the plastic, he can transfer the picture he gets onto paper, in the form of a drawing.

Of the 36 teachers on the staff, 16 have had special training in defectology, and the others have had the regular training required of a teacher in a general school. We were told that a staff member usually stayed until she retired.

During our conference at the school the Assistant Director of the Institute of Defectology said that there were special teachers for children with special problems. From her statement we understood that all special teachers must have at least 5 years of education beyond the general school and that they receive a 25 percent bonus in salary.

Boarding Schools

The decision to establish boarding schools in the U.S.S.R. was made in 1956 by the 20th Congress of the Communist Party to prepare "well-educated citizens for practical work." By 1958 approximately 456 had been established, and they had a total enrollment of about 104,500, as was indicated earlier. Although the original plan had been to locate most of them in rural areas, in the so-called virgin lands and sparsely settled sections, many have been established in cities where facilities are more easily available; 20 of them are in Moscow. To date, boarding schools have not been able to admit all who applied.

Boarding schools are operated under the jurisdiction of the Ministry of Education and are to a large extent supported by the Government. The cost to the State is from 500 to 600 rubles per month per child. Children who have no parents pay nothing; parents of other children pay a small amount, depending on family income but on the average not more than one-tenth of the total cost. The decisions on charges are made by local district executive authorities (about 18 members on a committee) who are elected by the people of the district and are concerned with different phases of life in the district.

Most of the buildings now used by boarding schools are former general education schools which have been converted to provide classrooms, dormitories (usually on the third floor), dining rooms (usually on the ground floor), and such facilities as a library, a Pioneer room, an auditorium, and laboratories of various kinds. Like other schools, they usually have a garden in which children raise flowers and vegetables for the school use or for sale.

We were told a number of times that the children eligible to attend boarding schools were orphans, children of war invalids, children from large families with limited income, and from families in which there is a single parent or the mother is working, and children of illiterate parents. Incidentally if a child with no parents has close relatives he is not called an orphan but he is eligible to attend a boarding school. Parents decide whether their children should attend boarding school.

Pupils may spend Sunday, holidays, and their vacation period—June through August—at their homes; they are, however, expected to spend 1 month of their vacation at a Pioneer camp in the country. Parents may visit them at any time.

Boarding schools are coeducational and attempt to enroll an equal number of boys and girls. As in other schools, boys and girls sit together. We were told that schools try to develop good relationships between boys and girls from their earliest years, and that boys and girls are encouraged to develop a feeling of mutual helpfulness and respect in a disciplined way.

When new boarding schools are established, only the first few grades are provided for; others are added later. Within the years covered, the course of study is the same as in the regular general school, but with more guidance and more practical work, and, in some, with more attention to art, singing, dancing, and string orchestra. In one school we were told that from the first through the seventh grades, children have simple activities emphasizing labor in work with paper, clay, wood, and other materials, and in the eighth grade they have industrial experience.

A large part of the work in boarding schools is done by the pupils, except the heavy labor; however, the amount of work they do varies from school to school. Children are housed in dormitory rooms and are responsible for caring for them. They make their beds, clean their rooms, and take care of their own clothes. The older pupils help the younger ones. In one school we visited dormitory areas for older groups, each with about 15 occupants; they were spotless. We looked into the wardrobes and found that they contained a dress or two other than school uniforms, night clothes, and an outdoor coat and hat.

Boarding pupils also work in the dining room and kitchen. At one of the schools we visited we were told that the loudspeaker was sometimes used to make such announcements as "Natasha made the pie tonight." We happened to be visiting the school during the luncheon period. For lunch that day the children had eggs, bread, and buttermilk. They helped with the trays and cleaning the table. Although there were about 150 in the room, with boys and girls sitting at the same table, there was no talking during the meal.

As we went through one building we asked about flower pot holders clamped to the iron banisters and learned that a model of a flower pot holder made by five of the boys had been accepted by a factory and that the boys had received an award for their idea. Those we saw served a double purpose—they were on display and they prevented pupils from sliding down the banisters.

In one boarding school we saw a woodworking shop in which pupils made products to sell; it thus serves an educational and a practical purpose. Last year its total sales amounted to 150,000 rubles which were used for children's activities, for excursions, and for buying equipment. Its playground was well equipped and playground activities appeared to be well organized. Last year in this school 25,000 rubles had been invested in the improvement of the machine shop.

Since boarding pupils spend a 24-hour day at school they very likely have more time for reading than other pupils have. We were told in one boarding school that children, beginning in the first grade, read about 10 books a year outside of class; in the sixth grade they are required to read 30 books but most of them read at least 100 and some as many as 150. We were also told that the pupils' favorite American authors were Jack London and Mark Twain.

In addition to regular classroom teachers there are assistants or tutors so that the staff seems unusually large. The assistants have had higher education in guidance and they are required to live at the school. In one school with an enrollment of 180 pupils in grades 1 through 6, there were 30 staff members. At another school with grades 1 through 6, there were 240 students, 32 teachers, and 48 other staff members, or a total staff of 80 to a student body of 240. We were told that in some schools even the custodial employees give some instruction.

Soviet Teachers

More than 1,800,000 teachers are employed in schools at all levels in the U.S.S.R. and all have had some pedagogical training, at least after beginning their careers. We were told that more than 270,000 of them have been awarded medals for outstanding service or for a contribution to educational theory and practice. As members of an honored profession, teachers are highly respected and well paid. Many have been elected to public office. Some are Party members, some are not.

In our visits to Soviet general schools we found the teachers friendly, hospitable, and gracious in answering our questions, as they were in schools of other types. Moreover we were impressed by their competence, seriousness of purpose, their desire to increase their skill, their evidence of affection for their pupils, and their pupils' respect for them.

Soviet educators are very much concerned with teaching methods; methods are emphasized in teacher-training institutes, in textbooks (many textbooks carry instructions for their use), in published literature, and in inservice training. The emphasis is reflected in teachers' daily classwork.

Each teacher is required to work out careful plans for her lessons and have them approved by her principal. A commonly used plan calls for review of material covered, followed by presentation of new material.

The teaching we observed, the recitations we heard, and the copybooks we saw indicated that there was much rote learning.

Salaries of teachers in general schools are fixed by the Republic Ministry of Education, but the scale varies according to the region and the teacher's position and years of service. Teachers in areas offering less attractive living conditions get higher salaries than those in cities and other areas usually considered attractive. The salary of a general school administrator depends on the size of the school, the number of classes, and his or her education and experience but is usually higher than that of a regular teacher. Teachers in kindergartens and nurses in nurseries receive less than teachers in the general schools.

Salaries of beginning teachers are equal in general to those of doctors and engineers, and they can make extra money by increasing their teaching load or serving as group leaders in Young Pioneer circles. Merit teachers get higher salaries or a bonus. There are periodic increases, according to length of service, after 5 and 10 years. Pensions are granted after 25 years, but a teacher with more than 25 years of service who continues to work receives both pension and salary. In a general school we visited at Tashkent, 12 of the teachers were receiving pensions as well as salaries, evidently because they had been asked to continue teaching after reaching retirement age.

It is difficult to compare the salaries of teachers with those of persons in industry because they are paid on a different basis; a few figures, however, will give a general idea of the teachers' relative position:

> A graduate of a pedagogical institute receives an average of 670 rubles a month as a beginning teacher (depending on the region).
>
> A young beginning physician, the graduate of a 6 year medical institute, receives 600 rubles a month.
>
> A young beginning engineer receives about 800 rubles a month.

In a general school we visited in Sverdlovsk the director received 3,000 rubles a month, which, we were told, was equal to the salary of a chief in industry; the merited teacher of mathematics received 1,700 rubles a month, and an English teacher, 1,400. We were told that the average wage of a parent of the children who attended this school was 600-700 rubles a month. But we noted that an average worker in heavy machine industry in the Sverdlovsk area received from 1,200 to 1,500 rubles a month; skilled workers received more.

The normal teaching load for an elementary school teacher is 24 hours a week; for a secondary teacher it is 18 hours. A young teacher may not teach less than 18 hours; all teachers may increase their salaries by increasing the number of hours they work.

All teachers work for 10 months of the year, with a 2-month vacation in the summer at regular pay. They are required, however, to spend 2 weeks in August preparing for the next school year. We polled a number of teachers in a general school in Leningrad and found that all were planning to spend their summer vacations in leisure pursuits.

In all of the general schools we visited we were favorably impressed by the pupil-teacher ratio and by the number of teaching assistants available. A few figures will give some indication of the staffing pattern. In one school we visited, there were 800 pupils (half boys and half girls) enrolled in 30 classes: 14 classes for grades 1-4; 7 for grades 5-7; 9 for grades 8-10. In addition to the director, deputy director, and the head of the elementary school, there were 57 teachers. This was a fairly good pupil-teacher ratio, indicating that teachers were not held down by too many class responsibilities.

By our standards some of the city general 10-year schools were overstaffed. For example, Moscow School No. 151 employs a total staff of 102 persons to serve 928 pupils. The staff includes:

45 teachers
1 director
1 assistant director of instruction
2 curriculum leaders
1 business manager
1 secretary, typist, bookkeeper
1 physician for 4 hours every day

1 nurse, 8 hours a day
1 librarian
19 technical staff, including watchman, cleaners, dusters, carpenter, locksmith, yardmen, electrician, and 10 sweepers (2 for each floor).

Figures from other general 10-year schools, selected at random from those we visited, showed a similar pattern:

Sochi: 800 pupils on 2 shifts; 39 teachers.
Alma-Ata: A 10-year school on a collective farm: 1,114 pupils; 50 teachers.
  A 10-year school where half the students were boarders: 700 students; 57 teachers, and a total staff of 100.
Sverdlovsk: 1,280 students on 2 shifts; 54 teachers; total staff of 74.

Cooperation With Parents

Soviet school authorities make a determined effort to work closely with parents. Various councils, committees, and other groups have been formed to stimulate parents' discussions of school problems and to encourage them to take an interest in school activities. For each class there is a parents' committee to work with teachers, pupils, and other parents.

At a general school in Moscow we were told that once a month, on what is called "the day of open doors to parents," there is a meeting lasting about an hour and a half at which teachers lecture on child care and related subjects. The school director has the authority to require one parent of each pupil to attend, and all the teachers must be present to answer questions.

Parents may visit the schools at any time, but some schools have regular visiting hours on certain days each week.

A number of official educational publications, such as the periodical *Family and School*, are issued specifically for parents.

We got the impression that generally parents need no urging to cooperate in school activities, for they realize that education is almost the sole means of getting ahead. They also recognize that the one way they can do the most for their children is to see that they get the best education possible.

V. Extraschool Activities

PARALLELING THE PROGRAMS of the general schools are the programs of extraschool activities. Such activities are conducted in the afternoon after class in the school building and in special centers open throughout the day, 7 days a week, usually from 9 a.m. to 9 p.m.

The programs are educational, whether they are conducted in the school building or in special centers outside the school. They are created to influence the physical, moral, educational, and political development of the children; to provide vocational guidance and direction; and to appeal to children's interests. Through them children can participate in a wide variety of activities—technical, scientific, artistic, sports, and others.

Extraschool and extracurricular activities are sponsored by the Ministry of Culture with some aid from industries, collective farms, trade unions, and other organizations, and some of them are sponsored and directed by organizations of the Communist Party.

Party organizations have been set up for each age group in the general school: Children from 7 to 9 years old may join the Young Octobrists; from 9 to 14, the Young Pioneers; and at 14, the Komsomols (All-Union Lenin Young Communist League). Teachers in the schools we visited emphasized that membership was voluntary. Young Pioneers wear a red kerchief around their necks, as a symbol of membership, and in most of the classrooms we visited nearly all the children wore them; those who did not may not have been members or may have temporarily lost the right to wear them as a punishment for misbehavior.

In every school there is a Pioneer Room in which a portrait or statue of Lenin is featured as well as the oath of the Pioneer: "I, a Young Pioneer of the Soviet Union, before my comrades give this oath, to love the Soviet Union, to live, to study, and to fight according to the teaching of Lenin and in the way which the Communist Party teaches." A trained leader, either a teacher or a person from outside the school, directs the activities of the Young Pioneers, which are said to be political but which also have to do with the life of the school.

Many extraschool and Pioneer activities are conducted through circles, which is the term given to groups or clubs of 12 or 15 young people. Such activities, which are offered in great variety, in a sense balance the fairly rigid school curriculum. Participation is voluntary. Each child may choose one circle which he attends for two 2-hour periods a week; he is not permitted to join more than 2. After he has joined a circle he is not permitted to withdraw and join another, but must remain in the same one for a year.

The use of circles as an educational and political device appeared to us to be well and extensively organized. Briefly, a circle works in this way. A group of pupils, boys and girls, interested in a particular subject or hobby meets weekly for a lecture or to analyze and work out problems. Generally it is supervised by one of the teachers, but in towns where there is a university or a teacher-training institute the school invites a student from one of them to act as supervisor. The State encourages the "circle" method, in general, by providing books and pamphlets written especially for such groups.

Center for Young Technicians

While we were in Moscow we visited the Central Station of Young Technicians, which is a leadership training institution. It coordinates training activities throughout the U.S.S.R., primarily through correspondence. There were no regular students there, but leaders of Pioneer circles, either teachers or university students who are trained in what seemed to be a workshop type of setting, come in for help. On the day we visited the Central Station of Young Technicians a group of leaders was spending the day there getting ready for summer Pioneer camp work. They were reviewing a film of Young Pioneer activities of the preceding summer.

Different circles meet at this center. They include areas such as aviation, boating, electricity, radio, astronautics. Pupils from grades 2 through 10 come to the center, but a few groups for young children also come. The younger ones are encouraged to work in an area such as aviation rather than in a more complicated area. There are three circles for children of ages 8, 9, and 10 at this center, described as for "skilled hands." We were told that the total number of circles at this center would be reduced next year, but we were given no reason.

The center is open from 9 a.m. to 6 p.m. Primarily boys attend, but it is not limited to them. Last year 370 different children attended circles here. One of the activities mentioned to us was photography. We were told that many parents present their children with cameras on their birthdays. Children with an interest in photography can then go to the center to join a circle that will assist them.

Four chief qualities considered in recruiting persons as leaders are enthusiasm, skill, ability to work with their hands, and ability to relate the theoretical to the practical. This institution publishes a series of pamphlets, one of them in English describing its program, and the others in Russian giving suggestions and directions for carrying on various types of activities.

Center of Scouting

Before leaving Moscow for our circuit within the Soviet Union, we also visited a resource and training center for Scouting and Nature Study which was established in 1918 for the RSFSR. There are similar stations in the autonomous republics. The Soviet Union has a wide network of such organizations. At this center there are 11 full-time paid workers; but in the village teachers and Pioneer leaders are also responsible, although they do not get extra pay. Children from the 5th to the 10th grades are included in this movement.

Exhibits posted on the walls of the halls showed by a series of illustrations how to organize a camping expedition. Soviet children have vacations three times a year. At those times children come from various parts of the country to the Scouting Center to spend about 10 days, girls and boys together with a leader. This center also gives leadership to Pioneer circles, although it is not organized for this purpose.

In a recent summer camp, children guided by this center had responsibility for discovering mineral resources, especially new ones, and helping on collective farms. We were told that 53,000 groups, consisting of more than 1,000,000 children, were organized. In 1957 various groups met at the Caucasus. In 1956 children had scouting for only 2½ months in the summer for working on 9 projects such as those just described.

Nature Center

In June 1958 the Soviet Union celebrated the 40th anniversary of the nature movement. About 2,000,000 children from the RSFRS participated. Children may be in a circle with work related to the center and develop an interest that will take them on to a university in the same field. There are nature stations in each of the Republics, 71 stations in all. They deal with agriculture and other areas and give guidance to the Young Pioneers. Children in grades 1–10 of the general school come to the center for certain circles. After the 8th year of school, children spend a summer on a collective farm. Here again, the center coordinates the work throughout the country. For example, a local center sends in a description of a project which the Nature Center publishes for distribution to other centers.

At work when we visited this center was a circle of children interested in breeding rabbits. There were 12 or 15 children grouped about a long table talking with their leader. They took us outside to see many varieties of rabbits in pens, each with a record card—showing growth, amount of food and water provided—attached to the cage. Other groups at this center were interested in chickens and silver fox.

Those in charge of the center took us to visit a number of laboratories where we saw many nature specimens which the children had collected.

Pioneer Palaces

Closely related to the Young Pioneers is the Pioneer Palace or House, which through its many circles provides out-of-school activities, and Pioneer camps.

During the summer vacation many children spend a month in a Pioneer camp in the country engaging in useful activities. They may carry on activities on a collective farm, help in draining a swamp, clear out brush and weeds, plant trees, or protect wild life. A child may even go with a group on a trip to the Caucasus to prospect for minerals such as uranium. We were unable to visit a Pioneer camp but we did visit Pioneer Palaces in Leningrad and Sverdlovsk. Brief descriptions of their programs illustrate the operation and the organization of Pioneer circles, whose purpose, we were told, is to aid parents and schools in the upbringing of children.

Leningrad

In Leningrad, with a population of over 2 million, there are more than 200,000 children and young people in the general schools. Here there is a Central Pioneer Palace of 308 rooms which formerly belonged to the Tsars. Approximately 10,000 children a week attend 200 circles. In addition, there are Pioneer Houses in each of the 19 districts in the city. The work of the Pioneer Palaces is now 20 years old in Leningrad. The big industrial enterprises help financially in making activities for children possible in these centers. Trained leaders are available who receive continuous training. Such leaders may be teachers, young people from the universities, or outstanding adults who volunteer their time.

There are many circles for children at all levels of the general school, divided into three sections according to age. The circles are conducted from September 1st, when school begins, into May, when school closes. For those children who remain in the city there are special activities. The circles are many and varied, including dancing, library, games, study of English, many aspects of nature and science, driving, chemistry, and others such as those listed in the inventory for Sverdlovsk which follows.

In one room children were playing chess. In another they were playing games such as a type of hockey on a board with sticks attached to the board but operated by the players. We were told that the children had made up these games.

In another room the children had arranged beautiful dolls and other gifts from various countries of the world. Since there was no doll to represent the United States, we presented them with a Gini doll dressed like a little American girl.

In yet another room children were folk dancing. As we arrived we were made a part of the dancing group to demonstrate our ability to keep up with the children. A very small boy danced a solo which all applauded.

Many rooms served as display centers for science projects of the children and young people. The projects displayed ranged from radios to mechanically operated toys.

Sverdlovsk

In Sverdlovsk there is a central Pioneer Palace, which was once the home of a wealthy nobleman, as well as eight district Pioneer houses.

The program in Sverdlovsk is organized into six departments: Young Naturalists, Young Tourists, Sports, Scouts, and Art Work. Within these are grouped many circles in which children can improve their various skills and abilities. About 5,000 children can attend these centers weekly, and it is estimated that 500,000 children (not different children) engage in extraschool activities here during the regular school year. Special mention was made of the importance of music circles and of driver training circles.

The central palace opens up at 9 a.m. There are 70 teachers and tutors or leaders at this central palace. In addition there are 100 other persons (11 of them part time) on the payroll. The leaders of the circles have the same qualifications as teachers in terms of education at pedagogical technicums or institutes. When a teacher serves as leader of a circle in addition to her regular teaching, she usually receives extra pay. In Sverdlovsk a child spends 2 hours twice a week in his circle and may choose only one at a time. Sometimes he follows the same circle for several years.

There may be groups on the same subject for different ages. There are four English circles even though English is studied in school. Here English is approached largely through activities.

At the Sverdlovsk Pioneer Palace a group of older boys and girls presented a play in costume to about 500 or 600 young people and children. In the main part of the building we saw a beautiful "Fairy Tale" room with colorful murals on the walls from floor to ceiling, based on stories by Pushkin. In a puppet theater also housed in the palace younger children recently presented a play based on the English fairy tale "Dancing Shoes." On exhibit, too, were many scientific projects prepared by young people. Many of these were in the form of working models of a telephone, a radio, or comparable objects.

In Sverdlovsk children were preparing for the summer. From this city about a thousand groups will go on excursions or to camps. It is also possible for children to visit parks each day under supervision. The children from grades 1 through 10 from the general school engage in the activities. Circles for school grades 1 and 2 are called "Working Hands." After completing 10th grade boys and girls no longer visit the Pioneer Palace. Through the Pioneer program many school children engage in studies in which they prospect for minerals, engage in archeological excavations, and work with museums and scientific institutions.

Children's Libraries

In Minsk we visited one of the Belorussian Republic's 65 libraries for children of the general school age. In its 18 separate departments it contains 50,000 volumes, circulates 10,000 books a month, and serves 5,000 children. Children with cards which they and their parents have signed can borrow the books they like. In the library reading rooms we noticed that some children were looking at a copy of the magazine ***Amerika.***

VI. Education for the Arts

FOR CHILDREN especially talented the U.S.S.R. maintains schools of music, ballet, and fine arts which provide training in these fields in addition to the general school program.

Institute of Fine Arts

In Leningrad we visited the Institute of Art, Sculpture, and Architecture, formerly the Russian Academy of Fine Arts. The Institute, which recently celebrated its 200th anniversary, is the oldest of the 50 special art schools in the U.S.S.R. It is under the jurisdiction of the Ministry of Culture and is supported by the Government.

The Institute offers a 6-year program in five departments: Theory and History of Art; Architecture; Painting; Sculpture; and Graphics. Last year it enrolled 667 students, about one-third of them in correspondence courses.

We were told that enrollment is small because the school emphasizes individual instruction and small-group work—not more than 4 students to 1 teacher in a class and in many classes, 1 student and 1 teacher. There are, however, usually 9 or 10 applications for every place available in the student body. Eligible students who fail to be admitted and are assigned to work may reapply.

To be eligible to enter the Institute, a student must have completed 4 years of study in a general school and 7 years in a special preparatory art school conducted in connection with the Institute. Graduates of the 7-year school may also enter a preparatory school and prepare for the Institute in from 3 to 5 years. Students study free of charge.

During the last year of school students prepare their diploma projects. After graduating the best students can take postgraduate courses either at the Institute or in Moscow. Other graduates are assigned to work in the different Republics by the Ministry of Culture.

All graduates enter the Union of Soviet Artists. Apparently they easily find work, for we were told that some of the Republics needed more teachers of art and mechanical drawing and that various organizations requested more persons for employment than are graduated from the Institute.

There is a total staff of almost 400 persons, 97 of them professors and instructors. Their salaries are the same as those in universities and other higher institutions. Staff members may, however, work in their specialities and earn additional money.

The Assistant Director, who was our host, told us that the Institute emphasizes realism in art, "that realistic art serves to unite the people but unrealistic art serves to divide them. We believe that children should study the environment around them, such as anatomy and nature—we should start here in teaching."

In our tour of the Institute we went through a number of studios where we admired some of the students' work and through a library in which some librarians lived during the war to protect the books. The Institute has extensive galleries of paintings, including the best diploma projects of students, some of them more than 200 years old. A large amount of space is devoted to the museum and galleries which we found attractive and spacious.

Ballet School

We spent one morning at a special ballet school in Leningrad, one of the 16 in the U.S.S.R. and one of the oldest and most famous ballet schools in the country. It was founded in 1738 and has had a tradition of training the greatest Russian ballerinas. Both Pavlova and Nijinsky were trained there. The school and its graduates have received many awards.

The school is administered and supported by the Ministry of Culture, which carefully plans admittance. Although it receives 2,000 applications each year, only 60 persons are admitted, and they are selected, after thorough examination, on the basis of good bodily proportions, agility, and musical qualities. If the school is not satisfied with the applicants, it seeks talented pupils by scouting around the country. Of the 60 admitted each year, 20 are from various Republics and the peoples' democracies and 40 from Leningrad.

Of the present enrollment of 305, two-thirds are girls and one-third boys, which is the usual proportion, as more girls are needed in the ballet and their mortality rate is higher. Generally few students drop out; on the average, of the 60 admitted, 50 graduate. Some drop out because of irregular physical development, for example, their feet get too large. We were told that 60 percent of the students are from working families and the others from the intelligentsia.

Pupils are admitted at 10 years of age and study there for 9 years, or 3 years longer than students in regular schools. Sometimes, however, a student is admitted beyond the age of 10 and given special training until he catches up with the group.

The curriculum through the 7th grade is the same as that in general 10-year schools; in grades 8, 9, 10 history of the theater and the ballet is added to the regular curriculum. Students study ballet for 2 hours each day, and in addition twice a week they have 2 hours of training in folk dancing, 2 hours in historical dancing, and 2 hours in training for the theater or opera. That adds up to 4 hours of training in the dance daily, in addition to the regular curriculum and musical training. Graduates become "artists of the ballet," and easily find jobs all over the U.S.S.R., but the best stay in Leningrad, we were told.

The school year runs from September through June. Examinations are held in May and June and are conducted by a special commission of experts appointed by the Ministry of Culture. The school director is always a member of the commission, and there is always a neutral member appointed from the theater.

When we were there, the school had a total staff of 122 persons, 85 of them teachers who are Peoples' Artists and Merited Artists.

We were told that the school has a total budget of 3,500,000 rubles a year, and that the State spends 12,000 rubles a year on each student trained in it. The students receive stipends ranging from 160 to 300 rubles a month, depending on their marks, and all students study free of charge.

The ballet school maintains a boarding school which enrolls 135 students for those whose homes are not in Leningrad.

While we were there some of the students put on an exhibition for us, which we thought quite good. We also had an opportunity to see some graduates perform, for the night before we visited this school we saw a brilliant performance of Khachaturian's ballet "Spartacus," in which 65 graduates of the school danced.

For students who wish to become ballet masters or teachers there is a 4-year school in Moscow.

Music Schools

There appears to be much interest in music in the U.S.S.R., and many schools offer music instruction 3 times a week in addition to the basic curriculum. In general schools music is taught up to the 6th grade only, but we were told that by 1960 it would be taught through the 10th grade. The Government, which is interested in improving music instruction, requires every general school to organize and maintain two chorus groups, one of children in the lower classes and one of those in upper classes.

In addition to the music instruction in general schools, there are special schools of music for talented pupils of the general school age. Such special schools prepare children for conservatories of music at the higher education level, which are under the jurisdiction of the Ministry of Culture. We were told that there are 40 special schools of music in Moscow alone.

In Minsk, we visited one of the special schools of music, an 11-year school under the Belorussian Conservatory. It had a total enrollment of 300 students and a staff of 100. About 40 of the pupils enrolled were from distant parts of the Republic and lived at the school.

Children get into the school in two ways—some apply and take entrance examinations; others are invited to attend by staff members who visit local schools in search of talent. We were told by the school officials that this method was the most effective in finding and enrolling talented children.

There is no charge for tuition, and after the 5th grade children with grades of 4 and 5 are given State stipends.

During their first 7 years in a special school, children take the usual school program along with instruction in music. Although the school we visited had no special voice department, all children study voice in groups. Classes are conducted in composition and in almost all instruments, including folk and national instruments. All groups are small with not more than 15 or 20 in each. In addition children are given individual instruction.

In our tour of the school we visited a light and airy studio equipped with a grand piano on which an 8-year-old girl was having a lesson. The little girl—we were told that she had been discovered on a collective farm—played a Beethoven concerto for us and played it beautifully. In the auditorium we heard several solos played well on the piano, violin, and harp, by children from 6 to 15 years old—all of them clean, spotlessly uniformed, and highly talented.

VII. Preparation of Workers

THE U.S.S.R. PLACES great emphasis on the preparation for work in addition to general education for all in schools, higher institutions, and other training facilities. For some persons preparation is a continuing process of work and study leading, it would seem, to their optimum development as workers to serve the State. Some pupils leave school before completing their secondary education. Some of them go directly to work; for these there are schools for working youth. Others enter labor reserve schools to receive training in specific occupational skills. Others enter technicums where they can complete their secondary education and at the same time acquire technical knowledge and skills. Workers under 18 years of age are employed for 7 hours a day, those over 18 years of age, for 8 hours.

We were informed that none of this education and training experience is necessarily terminal. Some of those who complete the school for working youth may go on to higher education. Some who finish labor reserve schools may, after a period of work experience, enter technicums, and some who complete technicums may be admitted to institutes. These experiences are available not only to youth but also to adults. In one school where employed workers were completing their secondary education we observed classes in which students up to 45 years of age were in attendance.

Schools for Working Youth

During World War II, schooling was interrupted for a large number of children 12 years of age and older. Some were forced to leave school to work in factories and on farms; others were orphaned and started to work to support themselves; some in war-devastated or occupied areas had no schools to attend. In 1943, the Government issued a decree which required enterprises employing large numbers of youth to provide educational facilities in the plants so that such youth and other employees might complete the 7-year school program. This was an emergency measure, but the schools for working youth have persisted. Their programs have been extended through grade 10, and enrollments have increased. It was reported in 1956 that 1,941,200 working students were enrolled in nearly 7,000 schools.

Schools for working youth are under the jurisdiction of the Ministry of Education. They are, however, operated jointly by the Ministry and industrial plants. Plants for which students are being trained furnish buildings and equipment and pay for the cost of upkeep. The Ministry prescribes the curriculum and pays teachers salaries.

Because of the maturity of some students, the program of the schools for working youth is shorter than that of the general education or 10-year school. Labor lessons and polytechnical subjects are omitted, and only general education subjects, including foreign languages, are taught. The school year is the same as that of the general school, but the school week is shorter. Classes are held 4 days a week, 4 or 5 times a day, and are conducted on two or three shifts to accommodate the factory work schedule of the students. Graduation from these schools entitles the student to seek admission to an institution of higher education. Some graduates are given preferential treatment at institutions which offer training in their particular occupations.

We visited two schools of this kind. One, the School for Working Youth No. 11 of the Urals Machine-building Plant in Sverdlovsk, was established in 1943 with an enrollment of 143. The present building was erected in 1955, and grades 6 through 10 are now taught. The enrollment is 800—500 men and 300 women—all employed by the plant. Of these, 218 are enrolled in grade 10. The school operates on two shifts—one, from 9 a.m. to 2 p.m., following which the students work in the plant from 5 p.m. to 1 a.m. The second shift is held later in the school day for workers employed on the day shift at the plant. Five classes are held a day, 4 days a week. The students are given leave with pay from the plant for 24 days annually, and in addition, leave with pay for 15 to 17 days to prepare for examinations.

There are 74 members on the school staff of whom 39 are teachers and other professional workers. As in other schools we visited, most directors of these schools teach some classes; at School No. 11 the director teaches from 4 to 12 hours a week, depending upon his wishes.

We were told that plant management encourages workers to complete their general secondary education because it improves their efficiency. The Urals plant operates 8 schools for working youth enrolling 5,000 pupils.

In Sverdlovsk there are 50 schools for working youth attended by 20,000 students.

The other school of this kind we visited was in Leningrad, School for Working Youth No. 15. Here grades 4 through 10 are taught. The curriculum is the same as in the general education or 10-year school. We were told that because working students have little time for homework, the school tries to cover this requirement in regular class time. Generally, the age range of the students is from 18 to 25 years, although when we were there some of the 10th grade students were 35 years old. The school is on two shifts, and classes are conducted in a part of a building which also houses a general or 10-year school.

We asked why these students were working and not attending the regular general school and were told that some were orphans whose formal education had been interrupted by the necessity for self-support. Others had attended labor reserve schools after finishing grade 7 and were completing their secondary education. Some had been ill and their full-time schooling had been interrupted. Others were from homes where the parents needed financial assistance, and some were housewives. Slightly more than half of the students in grade 8 had completed grade 7 last year in the general school, then became employed and were continuing their education this year in School No. 15 for Working Youth. The director told us that on the average from 75 to 80 percent of the graduates enter higher education institutions.

We observed a 10th grade class in School for Working Youth No. 15 taking the final examination in literature. The setting was the school auditorium. On the stage to observe the examination sat a State Examining Commission of 5 members. Students were required to answer one of three questions written on a blackboard mounted on the stage. Six hours were scheduled for this purpose. The questions asked for a discussion of selected works of Russian literature, such as "Why do you like characters of Fadeevs' book on the Young Guard?" We noticed that the students wrote out their answers to the question they chose and then rewrote the entire thing in pen and ink in a blue examination book.

We were informed that the examination questions were sent by the Ministry of Education to all schools for working youth of the RSFSR, and that the same examination was conducted at the same hour of this day in all schools of this kind.

We were told that officials of local industries, like those in Sverdlovsk, were interested in having their employees attend these schools. Teachers visit neighboring enterprises in company with representatives of the Young Communist League and Trade Union Workers. They speak with employees and advise particular ones to come to the school to complete their studies. In addition, a School Assistance Commission having the same representation observes the work of the school and the progress of the students. The management of the industries does not participate in this check up although we were told that directors of plants are always interested in the Commission's reports.

In Leningrad, 71,000 students are enrolled in 177 schools for working youth.

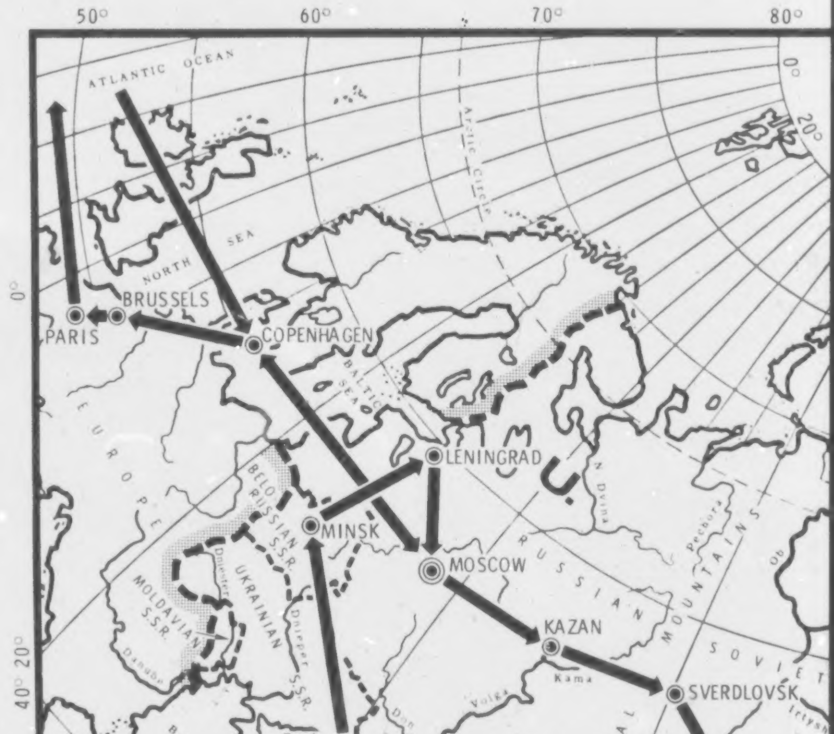
Schools for Training Skilled Workers

Preparation for occupational competence in particular trades, or specialties as they are called, is the responsibility of the Main Administration of Labor Reserves under the U.S.S.R. Council of Ministers. This Administration is charged with the responsibility of training and distributing labor reserves throughout the country. Some Ministries and departments of Government also operate industrial and technical schools, and some plants and farms provide direct training opportunities in occupational skills.

Under a decree of the Presidium of the Supreme Council of the U.S.S.R. in October 1940, the Government recognized the need for training between 800,000 and 1 million State labor reserves annually and for their transfer to industry. The decree provides that both urban and collective-farm youth shall be educated free of charge in trade schools, railroad schools, and factory-plant schools, and that students shall be supported by the State.

For the training of qualified metal-workers, chemists, miners, and workers in other complex trades, and in transport and communications enterprises trade schools offering 2-year programs were organized in cities as prescribed by the decree. Similarly, railroad schools with 2-year programs were organized for the training of qualified workers, such as machinists helpers, boilermakers, fitters and for the repair of steam locomotives, and others in complex trades. For the training of workers in the mass professions—coal mining, petroleum, construction and others—factory plant schools offering 6-week programs were organized.

The decree authorizes Councils of Peoples Commissars of the U.S.S.R. to conscript from 800,000 to 1 million urban and collective farm youth providing annually, those between the ages of 14 and 15 for training in trade and railroad schools and those between 16 and 17 for training in factory-plant schools. City Councils of Worker's Deputies are therefore obligated to select and supply annually certain numbers of boys in these age groups for training in such schools, the numbers to be determined by the Council of Peoples Commissars of the U.S.S.R. Graduates are considered as mobilized and bound to work for 4 years consecutively in State enterprises according to instructions of the Main Administration of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BLACK SEA
TURKEY
GEORGIAN S.S.R.
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CASPIAN SEA
KAZAKH
ARAL SEA
Syr Darya
Amu Darya
UZBEK S.S.R.
TURKMEN S.S.R.
TADZHIK S.S.R.
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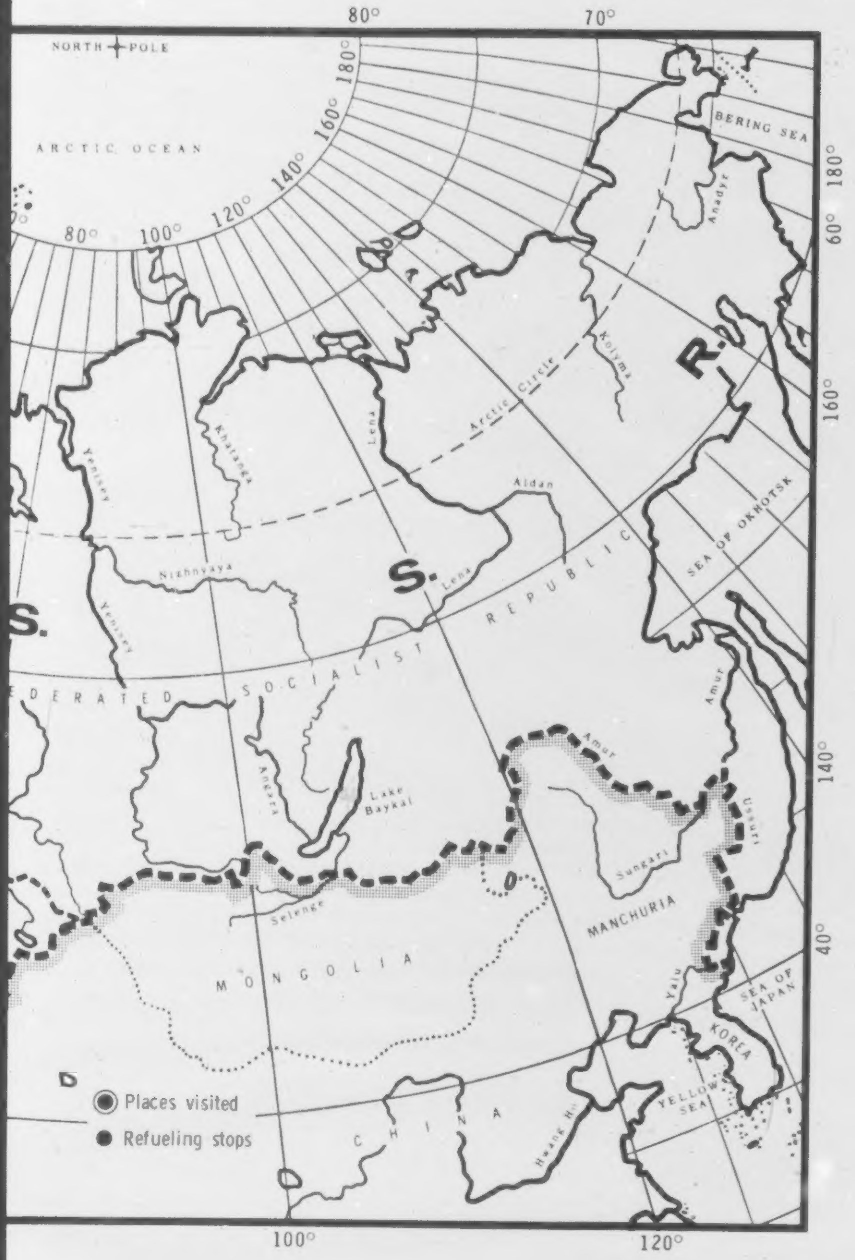
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Labor Reserves, with guaranteed wages according to the location of work in line with general principles. All graduates are granted deferments from conscription into the Red Army and the Naval Fleet for the period of obligatory work in State enterprises.

There are now several types of labor reserve schools. Some offer 2-year programs for graduates of the 7-year school to prepare them as skilled workers for the transport, mining, and other industries. Other schools conduct courses lasting from 6 to 10 months to prepare persons who have not completed the 7th grade for work in the simple trades. Still other schools train graduates of the general or 10-year school to become skilled workers in industry and agriculture in courses lasting from 10 months to 2 years, depending upon the complexity of the occupation. Communications is an example of an industry for which such training is offered.

The majority of the students, from 60 to 65 percent, in labor reserve schools have completed the 7th grade and from 20 to 25 percent the 10th grade; only from 6 to 8 percent have less than 7th-grade education. Approximately 700,000 students finish the labor reserve schools annually.

We learned at the Main Administration of Labor Reserves that from 800 to 1,000 different courses are published and made available to industry for the training of workers in 700 different work specialties. The large number of occupational specialties comes about because of the high degree of specialization of work, education, and training in the U.S.S.R. The labor reserve school provides, for example, a curriculum for the training of "turners," that is factory hands who are called "lathe operators" in this country. Training on the lathe is only one unit of trade instruction in the machine shop practice curriculum of secondary schools preparing persons for useful employment in the United States. In the U.S.S.R. a turner is trained in a school attached to a factory. After he completes his course, he will probably be employed as a turner in the factory to which his school is attached. For example, a boy trained as a turner in a labor reserve school attached to an automobile plant will very likely go to work as a turner in that plant.

Textbooks and methods of instruction are developed by this Administration and published in its own printing establishments.

The curriculum of the labor reserve school requires that from 60 to 70 percent of the instructional time be spent at productive work, either in the school shops or in the factory. The remaining time is devoted to shop theory pertaining to the job specialty and only that part of the theoretical content of the job which is necessary for the worker to know in order to function effectively. For example, officials told us that the mathematics course for a turner who had completed a 7-year school covered only the phases of mathematics he would need in his work as a turner, that a systematic study of mathematics was not required. Other subjects from which selected elements are taught are physics, chemistry, electro-techniques, and mechanical drawing. These schools make no effort to provide general education comparable to that offered in the general or 10-year schools. The student spends the last half year of the school program at industry practice in the plant where he will probably be employed to acquaint him with the work of the plant, its equipment, and production requirements.

Labor reserve students receive three free meals daily and uniforms; they do not receive stipends. If their families do not reside nearby, students may live in hostels at the schools and are then wholly provided for by the Government.

Instructional staff for shop courses are prepared in teacher-training institutions (technicums) conducted by the Labor Reserve Administration. There are 32 of these special technicums throughout the U.S.S.R. Most teachers are graduates of the 7-year school who have been to the labor reserve school and have had 2 years of practical work experience prior to entering teacher training. Their program is 4 years in length. Graduates of the general 10-year school who have finished the labor reserve school and have had industry practice are required to attend the special technicum for only 2½ or 3 years to prepare for teaching. In the U.S.S.R. workers' skill is graded on a 7-point scale, and only those with a grade of 5 and higher may enter teacher-training institutions. Teachers of certain shop theory courses are supplied by the Ministry of Higher Education from among graduates of institutes (engineering colleges).

We visited Labor Reserve School No. 1 in Moscow, one of 125 such schools there. This school was founded in 1920 and has prepared 14,000 metal workers, most of whom have gone to work in the automobile assembly plant on whose property the school is located. Many of the top workers of the plant, including the assistant director and 80 percent of the shop masters, attended this school. There are presently 850 students, boys and girls who have completed the 7th or higher grades. Some of them represent the third generation of families, members of which have gone to this school. The fathers of 70 percent of the students were killed in World War II.

Practical work experience in the school shops includes the building of usable equipment. We observed equipment of substantial size and modern design being constructed on a production basis for use in other schools and institutions. We were told that such production was for instructional purposes, not for the sake of production itself. Actual production, we were told, is inspiring to students; there can be no waste in productive work. Proceeds from the sale of school products are divided three ways—one-third goes to the students who worked on the finished parts both in the school shops and in the plant; one-third, to the school for cultural activities; and one-third to the State.

The shops we visited were housed in a one-story industrial type wing of the building with skylighted-roof; it had equipment sufficient for use by 425 students at one time. School is in session 6 hours a day. Students are divided into groups of 12 to 25 depending on the speciality being learned. For the 2-year period each group is under a master who is responsible for their progress. One class of "turners" was at work. Another class was composed of girls learning to operate another machine tool. Still another class was made up of deaf mutes practicing bench work in the metal shop.

A large attractive room for teachers contained an exhibition case of publications from other countries, not including the United States. The director showed us three texts prepared for teachers and students in training to become "turners," a book on methods of teaching the practical applications of the occupation, one on teaching methods in shop theory, and a collection of problems for student use in preparing for examinations. Each student is required to prepare a final project which compares to the diploma project of the higher institutions.

Teachers of shop theory courses must pursue in-service teacher-training courses at labor reserve technicums to qualify for continued service. All teachers are required to attend periodic in-service summer seminars for their improvement. Talks are given by engineers or scientific workers from the plant; for example, we were told that recently the assistant chief engineer of the automobile assembly plant spoke to the teachers on plans for the development of new products over the next 3 to 4 years. Salaries of teachers depend on their skill rating. They receive 48 working days vacation with pay annually. Often their trade union sends them to sanatoria for part of this period free of charge.

A permanent exhibition of impressive equipment is maintained in Moscow under the supervision of trained personnel to demonstrate the type of project constructed by students of the local labor reserve schools in their Pioneer circles. A competition is held for the selection of projects to be exhibited; the results are determined by a committee of "high standing" officials; and diplomas are awarded to the winners. We were told that work done in these circles improves the knowledge of the students in their specialties, and that projects prepared by students reflect higher skills than those prepared by students in circles of the general 10-year schools.

Training for industrial and other occupations is provided in other ways as well as in labor reserve schools. Some industries, notably light and food industries, conduct programs in what are known as the FZU schools. The Labor Reserves Administration provides assistance in curriculum development, methods of teaching, and the preparation of instructional materials for these and all other occupational training schools and programs discussed here. Some developmental work has recently been decentralized and is carried on in the several Republics. Similar help is given by furnishing materials useful in schools for the training of sales personnel for consumers' goods. Approximately 100,000 persons graduate annually from FZU schools.

Another kind of training for work in specific occupations is called individual and brigade training. This is preparation for jobs for which very little training is needed, and lasts from 3 to 6 months. Usually, most of the students are adults who possess no particular work skills. It is estimated that 1,200,000 persons attend annually the short courses in individual and brigade training.

Workers may also raise their qualifications by attending in-service and other programs which are conducted in various plants and by taking correspondence courses. The total annual enrollment in all courses of this type is reported to be from 3 to 3½ million persons.

Special Secondary Schools

Considerable attention is given to the preparation of semiprofessional technical personnel in the U.S.S.R.—technicians whose competence lies between that of the skilled worker and the professional specialist. The work of such technicians usually requires a greater amount of technical knowledge than of manipulative skill. Such workers are trained in special secondary establishments called technicums. These institutions are administered by the relevant ministries in charge of the branches of the Soviet economy that employ semi-professional workers.

Like some other types of institutions offering education for employment in the U.S.S.R., the technicum is organized to offer specialized instruction for particular kinds of work. Thus there are technicums for training workers for the power industry, the medical profession, light industry, and for others. The subjects to be taught, methods of instruction and materials, entrance quotas, and admission requirements are all worked out by the Ministry of Higher Education in its Special Schools Department. The importance attached to technicums is indicated by the number of students enrolled—2,011,000 in 1958, which is roughly equal to the number of students enrolled in higher institutions in the same year.

Approximately 400 different courses are offered by technicums in preparation for 275 specialties according to plans prepared in the Ministry of Higher Education. Technicums are required to follow these courses—violation is considered sufficient cause for withholding diplomas from graduates. In addition to courses in the main specialties, such as those in power, transportation, communications, printing machines, machine building, bookbinding, automatic assembly machines, and planning for an industry, courses are offered as follows: History of the U.S.S.R., Russian language and literature, mathematics, physics, foreign languages, general technical subjects, mechanical drawing, mechanics of materials, theory of mechanisms, tools and machines, electro-techniques, technology of metals, and others. The courses in the main specialties are approved by the ministries concerned with the particular field.

All technicums follow the same program for training in a particular speciality. However, some modifications are permitted by the Ministry of Higher Education because of territorial peculiarities; for example, agriculture in the Ukraine is different from that in Georgia.

The program consists of classroom instruction, including lectures for the upper classmen—especially for graduates of the 10-year school, individual work in laboratories, and industry practice in the school shops and factories. Students completing the program are required either to defend a diploma project or to take a State examination.

Until 1951 applicants for entrance to the technicums were graduates of the 7-year school. Since then, graduates of the general or 10-year school have been admitted to the technicums because, so we were informed, many of them were not ready for practical work. By 1956, 60 percent of all students in technicums had finished the 10-year school. We were told by officials at the Special Schools Department of the Ministry of Higher Education that more students entering some technicums should be graduates of the 10-year school, especially those preparing for work in hazardous industries or at occupations where an entering age of 14 or 15 is too young, for example, in coal mining and in the metallurgical field. Technicums admit applicants up to 35 years of age. Entrance examinations are required of all except those who have completed the 7th year of the general school with certificates of excellence and graduates of the general school who have been awarded silver or gold medals.

For students who have completed only 7 years in a general school, the program is from 3 to 4 years in length, depending upon the specialty they are preparing for—for example, in finance or economics, 3 years; in industry or agriculture, 4 years. In addition to work in his field of specialization, a student must take subjects from the curriculum of the 10-year school. Graduates are qualified for admission to the institutes. For graduates of the 10-year school, the program is from 2 to 2½ years in length.

Textbooks to be used are selected by the Ministry of Higher Education and issued from 35 publishing houses. Decisions of this Ministry on books to be published are announced in order to acquaint the publishing houses with plans for the future and to inform the technicums of texts which will be available. An author whose manuscript of a textbook is approved receives a fee and is granted 3 months' leave to complete it.

It is possible, if sufficient copies are sold, for him to derive income from the preparation of a text.

Although most of the graduates of technicums go to work in the industry for which they have been trained, those who were excellent students may continue their education at the institutes. At present, however, facilities in the higher institutions are not sufficient for all of them. Those who cannot be admitted as full-time students but who are qualified for entrance may go to work and continue their studies by attending part-time courses at an institute, that is, in the evening or by correspondence. Technicum graduates are required to have 3 years of full-time work experience to qualify for entrance to an institute as a full-time student.

Minsk Power Technicum

We visited the Minsk Power Technicum, which is under one of the Departments of the Council of Ministers of the Belorussian Republic. After destruction of the city in World War II there was need for an institution to train specialists for the national economy. To meet this need, this technicum was established in 1945 under great difficulty. It was moved to the present building in 1956. Students are prepared here in five different branches of the power industry: Heat power stations, electric power stations and networks, electrical equipment stations for industrial enterprises, electrical equipment stations for agriculture, and city gas networks. The technicum now enrolls more than 1,000 students, 810 full time and 213 part time. From 25 to 30 percent are girls. It employs a staff of 94, including 48 teaching members and, in addition, there are some visiting professors. There are two sessions for full-time students and a third session for part-time students.

During the 13 years of existence of this technicum more than 2,000 students have been graduated. These now work in different parts of the country as technicians and even as engineers, as some have gone on to the engineering institutes. There were 229 graduates in the class of 1958, and it was planned to admit 300 this year, all of whom would be graduates of the general 10-year school. The program for them is 2½ years long. The program for students who have had only 7 years of general education is 3 years and 10 months.

Admission to the Minsk Technicum is on the basis of an open competition and the courses are announced in the newspapers and over the radio. We were told that on the average there are approximately 10 applicants for each person admitted. To graduates of the general 10-year school, examinations are given in Russian language, composition, and mathematics (oral and written). For those who have completed only 7 years of school the subjects were Russian language and mathematics (oral).

Two curriculums are offered depending on the preparation of entering students. For those who have completed the 7-year school, general education subjects are taught during the first year and a half, and then specialized subjects are introduced. For these students the educational objectives of the general 10-year school, in addition to specialized education, are said to be achieved. For graduates of the 10-year school, only one-half of the first year is devoted to general education. School is in session 6 hours a day. Up to 40 percent of the time is spent in laboratory and shop work. Local industries assist the school by providing opportunities for students to acquire practical training and for consultation with them in the selection and preparation of their diploma projects.

We visited several laboratories—technical drawing, electrical measurements, stations and sub-stations, fuels and preparation of water, and automatic measuring equipment.

There are 23 technicums in Minsk and 113 in the Belorussian Republic. The latter group offer training for the chemical industry, building construction, automobile and tractor industry, the power and communications industries, and for the field of agriculture, specialization in agronomy, animal husbandry, cattle breeding, and veterinary medicine. In addition technicums offer training for surveyors, librarians, and textile workers.

Leningrad Medical School

In Leningrad, we visited Medical School No. 14, which is administered by the Ministry of Health. At this technicum the following secondary-medical and secondary-technical specialties are offered: Feldschers (doctor's assistants); technicians who repair and use X-ray, gamma radiation apparatus, and medical electrical apparatus; technicians who measure doses of ionizing radiation including the use, repair, and adjustment of dosimetric apparatus; specialists in general X-ray and medical technology; and medical opticians.

Graduates of both 7- and 10-year schools are admitted. For the former the program is from 3 to 4 years, depending on the specialty to be followed, and for the latter from 2 to 2½ years. Courses are offered full time in school and by correspondence. Examinations required for admission are as follows: For graduates of the 7-year school: Russian language, both written and oral, and mathematics, written and oral; for graduates of general or 10-year school: History of the U.S.S.R., Russian literature and composition, and mathematics, written and oral.

An illustration of the program of the Leningrad Medical school is given from the curriculum for feldschers. The subjects taught are: History of the U.S.S.R., general medical subjects such as Latin, biology, anatomy with histology and embryology, physiology, pathological physiology and pathological anatomy, pharmacology with prescription techniques, microbiology, hygiene, and organization of public health and health education. Special subjects include the care of patients, internal diseases, surgery, obstetrics and gynecology, epidemiology, child diseases, infectious diseases, skin and venereal diseases, physiotherapy, massage and therapeutic physical exercises, eye, ear, throat, and nose diseases, pathology, clinic and therapy in connection with toxic substances, neuro-psychical diseases, and organization and tactics of medical service of the Soviet Army. A total of 2,376 hours are devoted to these subjects. State examinations are given to students on completion of the programs in (1) internal diseases, (2) surgery, (3) obstetrics and gynecology, and (4) child diseases.

The enrollment in this school is 2,000, about equally divided between men and women. The students range in age from 14 to 20 years, except for correspondence students who are older. The faculty is composed both of doctors and engineers, and the director of the school is a doctor and also an engineer.

Graduates of the treatment division enter employment in institutions of the city, district, and regional health departments as well as in sanitary institutions of sea, river, and air transport of the U.S.S.R. Graduates of the X-ray techniques division enter employment in treatment institutions, scientific-research institutes, and enterprises of medical production, and in industry where there are X-ray and dosimetric installations. Graduates may enter higher education institutions or take part-time correspondence courses in them while being employed.

Technicum of Light Industry

At the Light Industry Technicum in Leningrad we saw students in preparation for work in the textile industry. Technicians are trained for the sewing industry as specialists in the design of women's wear; as mechanics for the maintenance of sewing machines and knitting machines, as specialists in the techniques and equipment of textile mills, and as economists who plan production and costs for light industry.

The day course is attended by 960 students. There are 760 students in the evening course which is 5 years in length. The program is 4 years in length for students who have completed the 7th year and 2½ years for graduates of the general 10-year school. Entering students are selected by examination—Russian language, in a written examination, and mathematics, both written and oral. Those who want to study modeling and design must also take a drawing test. The staff of 109 persons consists of 60 teachers, 15 masters who supervise practical work, and 34 others who perform some function at the school.

The program of general education is basically the same as in the general 10-year school, although slightly condensed. Practical and theory subjects are taught in workshops and laboratories. In addition work experience is gained in industrial enterprises. Each student is required to prepare and defend a diploma project. Some students are able to enter higher education institutions after finishing this school, and we were told that they generally do better than graduates of the 10-year school. Five percent of the graduates go on to an institute or a university.

Extracurricular activities are a part of the program of this technicum. There is a series of combined lectures and musical concerts which provide education in the arts. There are discussion groups and talks by people who have visited foreign countries. Also included are excursions, celebrations, and group attendance at the cinema.

We saw a library of 70,000 volumes, a room where models were exhibiting dresses and suits that had been designed and made by the students, exhibits of textile industry machines which had been designed by the students, and tools used in textile occupations, paintings of costumes done by students, and plans for the allocation and spacing of machines in a factory.

Growth of Technicums

Figures given us in the U.S.S.R. indicate that technicums have undergone remarkable growth over the years. In 1914 there were 450 technicums in 72 cities with a total enrollment of 54,000 students and a staff of 4,950 teachers. In 1955 there were 3,757 technicums in 852 cities with a total enrollment of 1,961,000 students and a total staff of 96,000 teachers.

VIII. Teacher Education

WITH THE ALL-OUT COMMITMENT to education as the way to the future, which we found to be characteristic of sentiment about education in the Soviet Union, we expected to find strong support for teacher education and rapid advances being made in the education of teachers. We found the type of drive and interest in teacher education that we had been led to expect.

Soviet educators are in the process of achieving two major objectives that have in recent years been the concern of our own teacher educators in the United States: (1) To unify all teacher education, and (2) to bring all teacher education to a college or university degree-level status.

Teacher educators throughout the Soviet Union are now transforming the training programs of elementary school teachers *from* 7 years of elementary and secondary schooling plus 4 years of normal school *to* 10 years of elementary and secondary schooling plus 4 years of work in a teachers college (pedagogical institute) or in a university. In the training of secondary school teachers, they are adding 1 year of college work to a program that previously consisted of 10 years of elementary and secondary schooling plus 4 years of teachers college or the university.

In the preparation of both elementary and secondary school teachers, there appeared to be an increasing emphasis on solid subject-matter content, with relatively less emphasis on pedagogy as such.

Soviet teacher educators consider practical work, that is—observation of teaching, student participation in the classroom situation, and student teaching—to be of the highest importance for teachers-in-training for both elementary and secondary schools.

The selectivity in teacher education is approximately 5 to 1; that is, out of approximately 5 students who apply for admission to an institution of teacher education, 1 is accepted.

At this time there appears to be no numerical shortage of teachers in the Soviet Union. In general, teachers appear to be relatively well paid; they have very good working conditions; and as a group they appear to be highly motivated and well-educated professionals who are happy in their work and proud of it.

Teachers are not overburdened with extracurricular work. Their clerical duties are minimal. Extra teachers, or tutors, are available to work with slow learners, and to assist generally as teachers' aides. Although schools in the Soviet Union meet 6 days a week, each teacher has 1 work day a week completely free.

Soviet teacher educators with whom we talked were deeply interested in our programs of student teaching and in the great similarities between all their problems of teacher education and ours.

Contacts With Teacher Educators

We had productive conferences with teacher educators wherever we went. In each large city we visited, we also were received at one or more institutions of teacher education (pedagogical institutes, normal schools, or universities). We had interesting conferences with the director and the heads of departments of the Pedagogical Institute in Sverdlovsk for 3 hours one morning; with the director and the heads of departments of the Pedagogical Institute in Tashkent for 2 hours; with a teacher education official in the Ministry of Education in Minsk; with several members of the teacher education staff at the University of Leningrad; and with an official in the Ministry of Higher Education in Moscow who had close touch with teacher education. These conferences were most productive and usually became active two-way discussions in which the American educator answered as many questions as he asked.

Each member of the delegation had some interest in teacher education and asked questions and made observations in the schools, colleges, and universities that we visited as well as in our group and individual conferences at the Academy of Pedagogical Sciences in Moscow, the Ministries of Education in the various Republics, and in the Pioneer Palaces and nature study and touring resource centers.

The emphasis in our visits to teacher-training institutions was necessarily on the preservice education of teachers. Although we discussed and saw evidence of active and well-established programs of inservice teacher education, we were unable in the time available either to visit local pedagogical centers for inservice teacher education or to inspect the work being done to upgrade teachers through correspondence courses.

Local pedagogical centers are the curriculum and general resource centers for inservice teacher education. They are apparently very active centers for the improvement of instruction through curriculum revision, the improvement of teaching method, the development of all types of audio and visual teaching aids, and for the production of teaching materials generally.

It is our understanding that inservice teacher education is an extremely vital, continuing force in maintaining and raising the quality of classroom instruction for all teachers in the Soviet Union. Specific provisions in budget, equipment, and time are made by the Republic Ministries of Education for this type of study on the job. Less-experienced teachers are encouraged to visit the classrooms of master teachers to observe their techniques. Conferences on the improvement of instruction are held regularly within schools and at local pedagogical centers. Many schools maintain libraries specifically for teachers. University professors in subject fields and in pedagogy are invited to consult with teachers in their working situations.

For the first 15 years of his career, a teacher is sent to a pedagogical institute or university at least once every 5 years to raise his qualifications. Teachers frequently spend their weekly free work day at an inservice institute. *The Teachers' Gazette*, a newspaper published just for teachers, is widely circulated and widely read. In general, it appears that graduation from a teachers college or university is considered to be only the beginning of a teacher's study of all that is required to be fully qualified as a member of his profession. As long as he is a teacher, his professional study for self-improvement and as a contribution to the excellence of his colleagues never ends. As far as we could determine, this is standard operating procedure.

What we were told about the use of correspondence courses for the upgrading of teachers and for inservice teacher education generally throughout the Soviet Union impressed us because of the extent of correspondence work, the apparent practicality of this approach in a vast country still with limited surface transportation facilities, and the provisions that are made for a correspondence student to "touch base" periodically with the institution with which he is corresponding.

Probably the majority of teachers in service today in the Soviet Union have educational backgrounds considerably below current standards for a teacher's diploma. Furthermore, virtually all the younger teachers and many of the older ones are expected to engage in fairly extensive correspondence work to bring themselves up to grade, and in addition to attend regularly organized courses for this purpose at pedagogical institutes or universities.

Preservice Teacher Education

Soviet teacher educators were generous in giving us access to any materials and information that they had available on their programs.

At two pedagogical institutes (teachers colleges), we were given copies of the publication, *Study Plans for Pedagogical Institutes*, issued jointly by the RSFSR Ministry of Education and the U.S.S.R. Ministry of Higher Education in 1957. It is the basic document available today on the teacher education curriculum, but it pertains only to programs of pedagogical institutes for the preparation of secondary school (grades 5-10) teachers. The program outlined in *Study Plans* gave us a point of reference from which to comprehend the general pattern and content of teacher education programs for all levels of teaching as a supplement to our personal observations in the schools, the teachers colleges, and the universities.

From our discussions with members of the faculties of teachers colleges we estimate that the proportion of a teacher's preservice program devoted to pedagogy is approximately the same as in the United States: For elementary school teachers, from 20 to 25 percent of a 4 year curriculum; for secondary school teachers, from 15 to 20 percent of a 4-year curriculum or 12 to 16 percent of a 5-year curriculum. The current objective is to provide a total of at least 16 weeks of student teaching—8 weeks in the next to last year of preparation and 8 weeks in the last year.

As explained to us, the supervision of student teachers in the first few weeks of student teaching seemed to be rather rigorous. Besides being observed by fellow students, the new student teacher is supervised very closely by a specialist in his particular subject field(s); by a representative of the faculty of pedagogy (method); and by the regular classroom (critic) teacher. The attitude appears to be one that is entirely consistent with educational philosophy generally throughout the Soviet Union; that is, that there is just *one right* way to do anything in the classroom. The high degree of supervision in the first stages of a student's practice teaching experience is to insure the development of exactly the right method of teaching the particular lessons that he is teaching. There is no doubt in anyone's mind just how the twig is to be bent.

The emphasis on the importance of student teaching, as well as on other practical field experiences of the teacher-in-training, is also the expression of the polytechnical emphasis in all education as it is applied to teacher education.

The questions asked us by Soviet teacher educators and Soviet teachers-in-training focused on two topics: (1) Programs of observation, participation, and student teaching in American institutions of teacher education, and (2) the use of stipends or scholarships for students in American institutions of higher education.

The member of our group with a special interest in teacher education was asked on several occasions to explain in detail just what American teachers-in-training did when they began their observation of teaching, their participation in classroom instruction, and finally how student teaching was organized and supervised. Group discussions of such questions generally went on for an hour or more.

In higher education in the Soviet Union, all tuition is free. It is estimated that approximately 80 percent of the students receive stipends to pay for their living expenses. We were told that stipends vary with the student's academic seniority, the quality of his work as indicated by his grades, his field of specialization and his economic need. In general, the higher his grades, the larger his stipend. The sons and daughters of college professors would be among the 20 percent of the student population who do not receive stipends, since their parents are the economic, social, and professional elite of Soviet society, and they would therefore not apply for stipends.

In answer to frequent questions on the subject, we explained the American system of tuition charges and fees in higher education and the various types of scholarships and fellowships that are available. Soviet students and educators were particularly interested to know whether our talented youth from the lower economic brackets of American society were able to get a university education. Their probing questions were thoughtful and very much to the point.

Teacher Education Curriculum

The teacher education curriculum and recent changes that have been made to improve teacher education in the Soviet Union are similar to the teacher education curriculum and recent changes that have been made to improve teacher education in the United States.

In the Soviet Union teacher educators are now in the process of adding a fifth year of higher education to 4-year programs for the preparation of secondary school teachers, and are transforming the program of elementary school teachers *from* 7 years of schooling plus 4 years of normal school *to* 10 years of schooling plus 4 years of higher education. They plan to have this program in operation in most of the U.S.S.R. by 1960. There is an intermediate step for the preparation of elementary school teachers in this transition now in force in a number of Republics: 10 years of basic schooling plus 2 years of teachers college.

Kindergarten teachers may be general school graduates who have received 2 years of special training to be kindergarten teachers, or they may be elementary school teachers who have received additional training for work at the preschool level.

College and university teachers are similar to teachers in institutions of higher education in western Europe or in the United States. It is assumed that breadth and depth of scholarship and the experience gained in its acquisition insure that the beginning college or university instructor will be a satisfactory classroom teacher. The general consensus appears to be that the young college teacher's future will depend more upon his productivity as a scholar than on his skill as a classroom teacher. On the other hand, the practical or polytechnical emphasis in education is felt clearly at the level of higher education: Soviet teachers in colleges and universities usually have practical and intimate experience in the applied aspects of the subject field in which they teach and will give a polytechnical, or applied, emphasis to their teaching.

The Soviet students whom we observed in institutions of higher education who were training to become teachers were similar in age and general relative background to their opposite numbers in American colleges and universities. Soviet students in institutions of teacher education appeared to have high morale and alert, inquisitive minds. They appeared to be keen and to be eager for education; and they had already identified themselves with the profession which is considered to be the key to progress in the Soviet Union both for individuals and for the Nation.

Programs of Study

Pedagogical institutes, teachers colleges in Soviet terminology, do now provide or are developing 5-year programs of higher education for the preparation of secondary school teachers and 4-year programs for the preparation of elementary school teachers. These teachers colleges (pedagogical institutes) are bona fide institutions of higher education. Similarly, the universities have or are developing 5-year programs of higher education for the preparation of secondary school teachers, but it was our understanding that few elementary school teachers are prepared in the universities.

To appreciate Soviet teacher education one must understand the European tradition in higher education upon which Soviet higher education is based. Universities in Europe have had remarkable autonomy under the various types of governments of the last 800 years and have been accorded a very high place in the public mind. European universities are organized on the basis of "faculties," similar roughly to our "departments."

Students who attend universities or teachers colleges in the Soviet Union register for study in a particular faculty, for example, physics and mathematics, Russian history and literature, physical education, natural science and geography, or foreign languages. A student's plan of study and guidance comes from the faculty in which he registers, and both the

Table 5.—Russian Language, Literature, and History

5-year program (pedagogical institutes)

No.	Subjects	Total semester hours	Total clock hours
	Required		
1	History of CPSU	14	224
2	Political economy	10	140
3	Dialectical and historical materialism	9	140
4	Logic	4	70
5	Psychology	5	84
6	Pedagogy	7	120
7	History of pedagogy	4	72
8	School hygiene	1	36
9	Foreign language	8	140
10	Introduction to linguistics	5	80
11	Russian language	42	700
12	Introduction to the study of literature	3	60
13	Russian literature	28	460
14	Foreign literature	17	250
15	Ancient History	9	160
16	History of the Middle Ages	10	178
17	Modern History	18	264
18	Modern history of the East	5	106
19	History of the U.S.S.R	25	430
20	Methods of teaching Russian	9	100
21	Methods of teaching literature	6	70
22	Methods of teaching history	4	64
23	Special courses (Russian language, literature, history)	8	130
24	Special seminars (Russian language, literature, history)	10	168
25	Special training	3	48
26	Physical education	8	140
	Grand total required	272	4,434
	Optional courses (examples)		
1	Practical training in conducting extracurricular and outside school activities		100
2	Latin		68
3	A modern Slavonic language		60
4	Literature of the People's Democracies		60
5	Museum science		40
6	History of culture		60
7	Practical training in expressive reading		60
8	Practical training in construction of visual aids		40
9	Improving sports skills		420
10	Foreign language (in years III and IV)		140
11	Music and singing		250
12	Individual instruction in playing musical instruments		250
	Teaching practice required		
1	Pioneer camps	3 weeks	
2	Schools	16 weeks	

concentration and the breadth of his program are determined by the requirements for graduation laid down by the faculty in which he is doing his work.

In the *Study Plans For Pedagogical Institutes*, the requirements for meeting standards for graduation (and certification) as a secondary school teacher are outlined. Condensed versions of two of these are given here as samples (Russian Language and Literature, and History; and Mathematics and Physics). Additional study plan outlines are provided in the Appendix A. Of special interest will be the basic required courses for all students: History of the Communist Party of the Soviet Union; Political Economy; Dialectical and Historical Materialism; Psychology; Pedagogy, History of Pedagogy; Physical Education; practice in both classroom and extracurricular activities.

The rest of the programs consists of strong majors in the students' fields of concentration plus some of liberal education for balance.

The program for the training in physical education, it will be noted, is for *4* years rather than 5.

Also, as previously mentioned, the programs for the preparation of elementary school teachers in the pedagogical institutes are *4-year* rather than *5-year* programs.

Table 6.—Mathematics and Physics

5-year program (pedagogical institutes)

No.	Subjects	Total semester hours	Total clock hours
	Required		
1	History of the CPSU	14	224
2	Political economy	10	140
3	Dialectical and historical materialism	13	140
4	Psychology	5	84
5	Pedagogy	7	120
6	School hygiene	1	36
7	History of pedagogy	5	72
8	Mathematical analysis	24	408
9	Analytical geometry	10	172
10	Projective and descriptive geometry	7	110
11	Foundations of geometry	8	64
12	Higher algebra	11	192
13	Theory of numbers	3	48
14	Foundations of arithmetic	3	36
15	Theory of functions of a real variable	3	50
16	Theory of functions of a complex variable	3	54
17	Special seminar in mathematics or special practical training in physics	7	84

Table 6.—Mathematics and Physics—Continued

No.	Subjects	Total semester hours	Total clock hours
	Required—Continued		
18	Elementary mathematics	24	400
19	Methods of teaching mathematics	15	194
20	Special practical training (mathematical models, surveying, calculation)	8	92
21	Mechanical drawing	5	86
22	General physics	35	620
23	Theoretical mechanics	8	112
24	Astronomy	8	72
25	Methods of teaching physics	15	210
26	Practical training in school workshops with elements of technology of materials	11	188
27	Electrical and radio engineering	9	140
28	Machine technology with practical training in auto-tractor technology	16	190
29	Educational movies	3	36
30	Special course (elective)	6	54
31	Foreign language	8	140
32	Physical education	8	140
33	Special training	3	48
34	Pedagogical practice in extracurricular activity	4	60
	Grand total required	320	4, 816
	Optional courses (examples)		
1	Practical training in extracurricular and extraschool activity		100
2	Methods of mathematical physics		40
3	Differential geometry		40
4	Theory of probability		40
5	Methods of approximate calculation		40
6	Algorithms and computing machines		40
7	Modern algebra		40
8	Nuclear physics		40
9	Physics of semiconductors and dielectrics		40
10	Aerodynamics		40
11	History of physics		40
12	History of mathematics		40
13	Selected topics in elementary mathematics		40
14	Special topics in the methodology of physics		40
15	Improving sports skills		420
16	Foreign language (in years III and IV)		140
17	Choral singing		250
18	Individual instruction in playing musical instruments		250
	Teaching practice required		
1	School	16 weeks	
2	Industrial	2 weeks	

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Explanatory Notes

The following notes on the two study plans given in tables 5 and 6 and the additional program outlines listed in the Appendix give added meaning to these bare outlines.

Notes of Explanation on Curriculums for the Preparation of Secondary School Teachers

1. *Length of programs.*—The period of training for each specialty except physical education (4 years) is 5 years. The ninth and tenth semesters are usually consolidated into a single term of study, the latter part of which (almost all of what would have been the tenth semester) is devoted to pedagogical practice in the schools and pioneer camps, industrial practice (where required), and state examinations. Final examinations and reports in the courses taken during the last year are held for the most part at the end of the ninth semester.

2. *Combined majors.*—Almost all of the specialties consist of two or three more or less related major areas, e.g., Russian language and history; two foreign languages; mathematics and physics; biology, chemistry, and agriculture; anatomy-physiology and physical education.

3. *Examinations.*—Four State examinations are required in each specialty upon completion of the period of training. One is the same for all specialties, namely, *History of the Communist Party of the Soviet Union*. Another, *Pedagogy* is also required in all the specialties, but it is modified in each to include the methods of teaching one of the major areas of the specialty. The other two are each in one of the major areas of the specialty, one area prescribed, and the other prescribed or to be selected by the student, depending on the specialty.

4. *Tests.*—Most of the courses terminate either in an examination (ekzamen) or in a report (zachet), or in both. [The report is really a kind of oral test, differing from an examination in being more routine and somewhat less rigorous, and ungraded for the purposes of promotion.]

5. *Special projects.*—Special projects (kursovye raboty) are relatively independent work done by the student and not tied down to a specific course. One special project is required in each but the first school-year. (Exception: Russian language, literature, and foreign language; in this specialty projects are required only in the third, fourth, and fifth school-years.) The project in the last school-year must be done on the methods of teaching one of the major areas of the specialty, on pedagogy, or on psychology (according to choice). The other projects must be done each in a different one of the major areas of the specialty. For example, in the specialty of Physical Education the first project is on anatomy or physiology (according to choice), the second on sports or athletics, and the fourth on the theory and methods of physical education.

6. *Special courses and seminars.*—The two special seminars and two special courses which each student is required to take are intended to widen and deepen the student's mastery of the major areas of his specialty. An idea of their nature may be gained from considering sample special courses and seminars offered for the specialty, Russian Language, Literature, and Foreign Language:

   a. Special courses in particular specific problems of contemporary Russian Language or historical grammar (fundamentals of orthography, punctuation, grammatical style, *et al.*)
   b. History of grammatical studies
   c. History of Russian linguistics
   d. Children's literature
   e. History of Russian literary criticism
   f. Theory of literature
   g. Literature of the peoples of the U.S.S.R.
   h. Special courses on individual authors or individual themes.

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7. *Training for extracurricular and extraschool activities.*—The special practical training (praktikum) in extracurricular and extraschool activities listed among the optional subjects (fakultativnye distsipliny) is required of all students. Students in the mathematical-scientific specialties are required to have two such courses, and students in the language-history specialties, three such courses. The extracurricular and extraschool activities include such things as organization of clubs devoted to studies of various subjects (nature studies, radio, languages, mathematics, chess, etc.); guidance of pupils' individual arts and sports activities; planning pupils' use of after-school and vacation time for educational purposes; wall-newspapers; use of movie and sound equipment; and lectures and activities of educational and propagandist nature in factories, on collective farms, in Palaces of Culture, and other places.

8. *Field work.*—An idea of the amount and nature of field work done in appropriate specialties may be gained from the schedule for the summer field practice in the specialty, Geography and Biology:

Subject	*Semester*	*Number of days (6 hours per day)*
Zoology	II	10
Geology	II	4
Botany	II	10
Topography	II	12
Meteorology	II	6
Botany	IV	12
Zoology	IV	12
Geology	IV	5
Fundamentals of soil culture	IV	5
Geomorphology with hydrology	IV	8
Physiology of plants	VI	
Geography of plant-life	VI	3
Complex practice in physical geography	VI	10
Methods of practice at an agro biological station and in the special school geographical area	VIII	12
Practice in complex physical and economic geography in a region distant from the location of the institute	VIII	30
Methods practice on the school plot and in the special school geographical area	IX	12

9. *Skills required in physical education.*—In the specialty of Physical Education students must achieve certain levels of athletic development throughout the course of their studies. In particular, at the end of the fourth school-year students are required to have one athletic classification of second-class or better (in gymnastics, basketball, volleyball, light athletics, winter sports, or swimming), two classifications of third-class or better (in the sports mentioned above, bicycle racing, hockey, soccer, or tennis) and two referee qualifications in the sports mentioned above.

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During our visit, the curriculum for the preparation of elementary school teachers was in the process of radical revision. Again in the typically European tradition, the preparation of elementary school teachers has been at a much lower professional level than the training of secondary school teachers. And, as might be expected, elementary school teachers have never been paid as well as secondary school teachers.

It was not difficult, however, to get a reasonably clear picture of elementary teacher education from conversations with the staff members of teachers colleges; and in one case, with the principal of a normal school for the training of elementary school teachers in Moscow.

In the U.S.S.R., elementary teachers-in-training have considerably more pedagogy (work in methods of instruction, the organization of instructional materials, the psychology of working with young children, etc.) than do secondary school teachers-in-training.

The proportion of elementary school teachers who are women in the U.S.S.R. is almost as high as in the U.S.A. Elementary school teachers in the Soviet Union have yet to achieve equal status in pay and in professional recognition with secondary school teachers. This is much the same problem that elementary teachers faced in America in the 1920's and 1930's.

The content of the curriculum for the preparation of elementary school teachers appeared to be essentially similar to the curriculums with which we have been familiar at the 1-year and 2-year normal school levels and in the 4-year teachers college in America.

We have nothing significant to add here to the brief information that we have already given on the preparation and professional qualifications of kindergarten teachers and teachers in the colleges and universities.

Certification of Teachers

In the Soviet Union, teacher certification is automatic with graduation from the teacher education program of a college or university—this applies also to the technical institutes of collegiate (higher education) level. The teacher's diploma in any of the 15 republics is accepted as a teaching certificate throughout the U.S.S.R.

Accreditation of Institutions of Teacher Education

All institutions of higher education are periodically inspected by the Ministry of Higher Education—usually every 6 years by separate faculties. A board of visitors is appointed to inspect a particular faculty of a particular institution. The board makes a thorough investigation of staff preparation and qualifications, the curriculum, textbooks, classroom management, examinations, and especially *the quality of the graduates as indicated by observed performance in final examinations.*

The board of visitors makes an analytical report which is submitted to the rector of the institution and its governing council of professors. Recommendations are discussed, and action is taken by the rector and his council. Such action decisions are usually subject to review by the appropriate department in the Ministry of Higher Education (U.S.S.R.).

The entire procedure for insuring that institutions of higher education keep up to standard appears to be simple and seems to be based on common sense. Institutions that prepare teachers are subject to the same requirements, although they are under the immediate jurisdiction of Ministries of Education in each Republic.

Since all institutions of higher education are supported by Republic and National educational authorities, the approval of operating plans and budgets by the Republic and National education authorities constitutes accreditation of programs at the levels specified by these authorities. The fact that the faculty of an institution is permitted to function is based upon the approval of that faculty as part of the Republic and National systems of higher education.

General Observations

We can best summarize our observations of teacher education in the Soviet Union by pointing out: (1) The high selectivity of teacher education, similar to the high selectivity of all higher education in the U.S.S.R. (approximately 1 out of 5 applicants to teacher education institutions are accepted); (2) the fact that the teacher-in-training considers himself to be a junior member of his profession and joins the teachers trade union as soon as he begins his program of higher education (trade unions are strong sources of basic Communist indoctrination, occupational solidarity and morale, and of continuing education); and (3) that the teacher-in-training identifies himself with a professional group that has a high priority in the national interest, is enthusiastic about its work, and proud of its position in Soviet society.

IX. Academy of Pedagogical Sciences

PERHAPS the most important influence in Soviet educational progress is the Academy of Pedagogical Sciences of the RSFSR, an institution which has no counterpart in the United States. The Academy is the research, development, and resource organization that keeps the educational system moving ahead and improves curriculum and methods of teaching. It is a part of the Russian Republic, not the Soviet Union generally, but as none of the other Republics has such an academy its work is used throughout the country.

Organization

Although the Academy is only 14 years old, it is of considerable size and complexity. Its members, who are elected for life, are some of the most distinguished scientists in the U.S.S.R. New members may be proposed by individuals, organizations, or institutions, and are elected every 3 years by secret ballot of members only. It is presently staffed by 34 full members who devote full time to Academy work, 54 corresponding members who devote part time to it, and 550 research workers. The staff is directed by a presidium of 9 members. Members receive a stipend of 3,500 rubles a month and corresponding members, 1,750 rubles a month in addition to their regular salaries.

The Academy of Pedagogical Sciences has no direct relationship to the Academy of Sciences (see p. 111) except that some persons may be members of both and at times members work together in planning research. The Pedagogical Academy also cooperates closely with other academies, like the academies of medicine and of agriculture.

It maintains 8 research institutes, 7 in Moscow and 1 in Leningrad. The 1958 budget for support of these institutes was 44 million rubles, which it received directly from the Government, although its budget is presented by the Minister of Education. It may request additional money from time to time. The institutes[1] are as follows:

(1) Institute of the Theory and History of Pedagogy, which contains a department of comparative education.

(2) Institute of Methods of Teaching, which is concerned with both general and polytechnical education and which prepares many of the curriculums, textbooks, and teaching aids used in the U.S.S.R.

(3) Institute of Psychology, which covers general psychology, child psychology, educational psychology, and also the psychology of labor.

(4) Institute of Esthetic Education, which is concerned with art education both at the preschool level and in the 10-year school.

(5) Institute of Defectology, which is concerned with handicapped children—retarded, deaf or blind children—and children with speech defects.

(6) Institute of National Schools, which is concerned with the teaching of languages and students of other nationalities than Russian. In the Soviet Union more than 50 different languages are used and are taught in the schools.

(7) Institute of Physical Education and School Hygiene.

(8) The Leningrad Institute, which is concerned with psychology and methods of teaching for students of different ages. To some extent it duplicates the work of some of the other seven institutes.

The Academy also is responsible for a number of other institutions and activities, including the following:

(1) It runs 5 experimental schools and 2 schools for defective children. In addition, it cooperates closely with 30 "base" schools, which it does not run, and with a group of 500 schools in experimental tryout of materials.

(2) It has an educational library of some 800,000 volumes.

(3) It maintains two museums—one of national education and another of the development of children's toys.

(4) It has a publishing house which has published approximately 1,500 books, mostly textbooks, of which some 38,000,000 copies have been printed.

(5) It publishes 3 magazines—*Soviet Pedagogy, Family and School, Problems of Psychology.*

(6) It publishes research monographs. There are 98 in the series so far, each covering a different problem.

(7) It is about to publish a children's encyclopedia in ten volumes.

(8) It works with teachers, encouraging them to carry on individual studies and research. It also sponsors a competition which starts locally and ends nationally with the best 800 or 900 papers being presented in Moscow each year; and the best of these are published and circulated throughout the Soviet Union.

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[1] The term "scientific research" is attached to the name of each institute.

Development of Textbooks

Of the many aspects of the work of the Academy of Pedagogical Sciences, three are of particular interest—the development of textbooks, the development of teaching aids, and the work of the department of comparative education.

When it is decided that a new textbook is needed in a particular subject, any teacher may try his hand at writing one, but it will have to compete for adoption with a textbook that is very carefully prepared by the Institute of Methods. The Institute begins by analyzing the textbooks in use and others written in Russian or other languages and gathering criticism and comments on them. In planning the new textbook it takes account of what the student needs to know in the subject matter field and his stage of development at the time he studies the particular course.

After this sort of analysis, an outline of 50 to 100 pages is prepared and copies are sent to teachers and specialists to get their reactions. After the outlines are returned, the author, who is always one of the top people in his field, writes the first draft of the textbook. Sections of it are tried out in the experimental schools, the base schools, and 200 cooperating schools, and opinions of students and teachers are requested. In this way the effectiveness of the materials is evaluated, and suggestions for changes are made.

The textbook may, of course, go through several drafts. When it is in final form, it and other textbooks that may have been written independently are reviewed by a commission of 16 scholars and practicing teachers who are appointed by the Ministry of Education from all sections of the country to avoid undue influence from Moscow and Leningrad. The whole process may take as along as 3 years. Not all of the textbooks prepared by the Institute are adopted. but its average is pretty high. Of the 38 textbooks it has prepared, 32 have been adopted.

Authors are paid from 1,500 to 2,000 rubles for each 16-page signature, and if the textbook runs to more than 100,000 copies they receive additional payments.

Development of Teaching Aids

The Institute is also concerned with the development of teaching aids, which are of three principal kinds: sound films, charts, and three-dimensional models. Our visits to school classrooms convinced us that extensive use is made of teaching aids. There were literally thousands of different charts and a great variety of three-dimensional models. Sound films were less in evidence, but they have, for example, 80 films for use in physics, 25 in chemistry, and 100 in biology. About 50 new films are made each year.

Topics on which films would probably be useful are suggested by the Institute of Methods. The list of topics is sent to the Ministry of Education which then draws up plans for film production for all courses and usually sets a schedule for several years ahead. As work on each film is begun, a leading scientist is assigned responsibility for the technical accuracy of the film and for the general plan. The production of the film is the responsibility of the Educational Film Branch of the Department for the Cinema Industry of the Ministry of Culture, which has studios in four of the main cities. For each subject a commission made up of specialists in the subject, teachers, and experts in methodology must pass, first, on the scenario and, later, on the finished film. In this way the Academy can coordinate films and textbooks. As each section of the film is completed, it is sent to an experimental school for a try-out.

The films are widely distributed. In every district there is a film library which distributes films, usually by a film messenger system. In this way one film may be used several times in one day.

All schools have projectors and screens. Big city high schools have a cinema operator who is responsible for receiving the films and showing them. In smaller schools the physics teacher usually takes the responsibility, though some pupils are trained in circles as an extracurricular activity in the operation of movie projectors and take considerable responsibility.

The careful work done by the Institute of Methods in the development of textbooks and the preparation of teaching aids, particularly the sound films, has extensive influence.

Study of Comparative Education

A very young department of the Academy of Pedagogical Sciences (it is only 2 years old) is the Department of Contemporary Education in Schools Abroad—what we would call Institute of Comparative Education—in the Institute of the Theory and History of Pedagogy. A very alert, intelligent staff of 13 researchers studies education in foreign countries. We were told that its primary goals are to be informed on what other countries are doing; to apply what is useful to Soviet schools; and to find laws on which education is based. The staff also supplies information it collects to the Ministry of Education. The background of the staff is varied. Some are from pedagogical institutes, some from a university's department of philology, and some have special degrees in linguistics.

Staff members not only study French, British, and American education but also follow education in Japan, Italy, Sweden, Norway, Denmark, Germany, Poland, Hungary, Czechoslovakia, and Bulgaria. In their studies they have to rely primarily on books and magazines since travel is limited, but they are well supplied with literature and have an excellent command of all relevant languages, from English to Chinese. They mentioned that they get 80 magazines from America and showed us a list of the American magazines which was impressively comprehensive.

Their method of investigation is for each staff member to study a particular country, but in so doing all look at problems of particular interest at the time—for example, the preparation of teachers or new developments in secondary education. As a result of their studies they make reports to other departments of the Academy of Pedagogical Sciences and to the Minister of Education. They also make recommendations; for example, they recently proposed that there be three general fields of specialization in secondary education—physics and mathematics, humanities, and biology—and this is one of the matters that is under discussion in the Ministry of Education at present.

The work of the Institute of Methods and the Department of contemporary Education exemplifies the strenuous effort being made in the U.S.S.R. to improve education. There is a constant search for better ways of doing the job. There is systematic experimentation with new methods and feedback from the schools on their effectiveness. As new courses and methods are perfected, they are introduced in a larger and larger number of schools until eventually they become universal.

Academy Influence

Due very largely to the work of the Academy of Pedagogical Sciences, education in the U.S.S.R. is not static but is constantly changing and improving. The strong belief of the Soviet people in education is matched by an equally strong effort of educators to find the best ways of accomplishing the educational objectives. Because of the central and influential position of the Academy of Pedagogical Sciences, improvements in education can be introduced in the U.S.S.R. much more rapidly than in a country where education is highly decentralized. It is something of a paradox that the Soviet Union, which in many respects is monolithic and inflexible, is in its educational program flexible to a degree and, even more surprising, responsive to grass roots experience with experimental programs. And, certainly one of the most important influences in this educational practice in the U.S.S.R. is the Academy of Pedagogical Sciences.

X. Higher Education

ALTHOUGH OUR INTEREST was primarily in the general school, we conferred with one of the Assistant Ministers of Higher Education and visited several institutions of higher learning in addition to the pedagogical institutes mentioned earlier. We visited the University of Moscow, Leningrad University, Tashkent University, the Polytechnic Institute of Belorussia, Kazakh University in Alma-Alta, Kazan University, Gorky University in Sverdlovsk, and others. These institutions are also undergoing reforms, but we were not impressed as much as in the secondary schools with the atmosphere of change and experimentation. This situation may be explained in part by the fact that the universities remain much more highly selective than the secondary schools; furthermore, they are relatively more tradition-bound.

We talked with faculty members and students. Students surrounded us everywhere we went and fired ceaseless questions. Their curiosity about life abroad is insatiable, and we had no doubt about their friendly attitude toward the U.S.A.

As the Minister of Higher Education was out of Moscow at the time of our visit, we were received by an Assistant Minister, who is an engineer by profession. We had a most productive conference at which he gave us some figures on enrollment and number of graduates and answered many questions on standards, admission policies, examinations, and other subjects of particular interest to us.

In answer to a question, the Assistant Minister told us that technicians who go to foreign countries to assist them are not especially trained for that purpose. In fact, he said, no one knows ahead of time who will go. The Ministry prepares a list of persons who might be suitable but others make the selection. The final decision remains with the individual.

Types of Institutions

Higher education in the Soviet Union is carried on in two types of institutions: The university and the specialized institute. Specialized institutes do not enroll students in programs outside their special fields and are to be contrasted with the universities which enroll students in many different disciplines, as do universities in the United States. The Soviet organization of higher education and of economic planning tends to perpetuate this insulation from the university concept—that historic concept which brings all students, teachers, specialists, and researchers together where they may share each other's ideas and problems.

There are 696 institutions of higher education in the U.S.S.R. over which the Ministry of Higher Education has full or substantial jurisdiction and about 30 under other jurisdiction, including Party institutes, trade union institutes, and several academies like our military academies. Party institutes offer general instruction and courses in the humanities, general science, economics, politics, and law primarily for persons more mature than the average university student.

Enrollment

In 1958 there were 1,178,000 full-time students, 127,500 part-time students, and 756,000 correspondence students in higher education. At present about 57 percent of the students are studying full time, the others part time and through correspondence.

Twenty-two institutions exist solely to offer instruction through correspondence, and some of the others have more students in correspondence courses than in full-time study. For instance, the director of the Kazan State Pedagogical Institute told us that of the approximately 4,000 students enrolled, 1,700 of them were on a full-time basis and the rest were studying by correspondence. At Kazakh University, we were told that the number of correspondence students nearly equalled the number of full-time students. Higher institutions offer correspondence courses in engineering, agriculture, general education, and many other subjects.

Throughout the country there is a network of "consultive points" to which students can go to discuss questions connected with their correspondence study. Students who live nearby can make appointments and see professors frequently during the year, sometimes as often as 2 or 3 times a week; those who live farther away can write for advice. At least once a year, all students go to the institution in which they are enrolled to present their written work and to take practical and theoretical examinations in seminars and written examinations. Promotion is based on the examination.

The number of persons studying part time is expected to increase rapidly as more pupils from general schools will be required to work for 2 years after graduation before entering higher institutions and as the new reforms get under way. Enrollment in correspondence courses may also increase as many graduates of general schools who are not admitted as full-time or part-time students directly to higher education will very likely take correspondence courses.

Admission: Standards and Practices

When we questioned the Assistant Minister about standards in various institutes and universities, he said that they could not, of course, be identical in all higher institutions, that some universities—the older ones particularly—are more popular and therefore have a more select student body, that standards inevitably vary because standards of teachers vary. He pointed out that since a person can apply to only one institution in one year, students become rather shrewd in learning about standards in the various institutions and their chances for admission.

In theory, anyone who wishes to enter a university or institute may do so by passing entrance examinations. Admission is based on results of entrance examinations prepared by faculties of the particular university to which students apply. The examinations are, however, much alike because each is based on what is taught in the general school. The same series of examinations are required of students applying for a particular field of study, whether it is in Leningrad or Moscow, but individual examinations differ somewhat. To some extent then admission requirements to institutions of higher education vary because examinations questions are prepared by different faculties.

During the past year 800,000 students took entrance examinations, and 85 percent of them passed. (On a 5-point scale, 5 is excellent, 4 is good, 3 is satisfactory, and below 3 is failing.) The student takes 4 examinations ordinarily, and if he gets a 3 or higher in each, he passes. Approximately 450,000 students were admitted to institutions of higher education last year. On the average the ratio of applicants to students admitted is 3½ or 4 to 1, according to the Assistant Minister. (There were approximately 250,000 full-time students admitted to higher institutions last year and the ratio of applicants is to full-time students.) In our visits to other universities we were given similar figures on the ratio of applicants to the number admitted.

We also learned more about the entrance examination procedure when we visited some of the universities and institutes. At Moscow University, for instance, a student is required to take 4 or 5 examinations, depending on the department or faculty to which he applies, but all students must take the examination in Russian language and literature and in a foreign language. (In Soviet higher institutions the term "faculty" is applied to a department of the university or a branch of learning, such as faculty of law.) Some examinations are oral, some written. There is an examination committee for each examination, a faculty committee for each faculty, and an overall committee. The examining committees are responsible for the examinations, and at least 2 faculty members must be present at all oral examinations. The same procedure is followed at Leningrad University.

At Moscow some department or faculty quotas have been established. For example, during the past year, the only students admitted to biology were those who had made 25 points on examinations, that is a score of 5 on 5 subjects; in geography students were admitted if they had grades of 25, 24, or 23; and in physics, which requires examinations in 6 subjects, some students were admitted with as low a score as 26.

To some extent the Ministry of Higher Education supervises the training of secondary school teachers and influences general schools indirectly by controlling the instructional standards through the higher education entrance examination. Entrance examinations tend to identify schools that give better training; if pupils from a particular general school do not do well on examinations, the Minister of Education takes measures—usually only consultive—to see that the school is brought up to standard.

When we asked what proportion of general school graduates go to a university or other higher institution, the Assistant Minister said: "All must try to receive a higher education. If a man doesn't try to develop to his utmost, he won't be satisfied." He illustrated his point by telling us the following incident: About a year ago a group of industrial workers, some of them blacksmiths with only 10 years of education, told him that even though they were satisfied with their work, they were beginning higher education courses in literature and law to qualify as people's judges after they retired.

Although he did not tell us the proportion of general school graduates entering higher education directly from school and the proportion entering after a year or more of industrial, construction, or agricultural work, he did say that persons who had served in the army and persons who had worked for 2 years were given preference, that science majors were ordinarily admitted into universities and institutes directly from school, whereas those who applied to other faculties were advised to work for a year or two. And he added, "Only time will tell whether the delay of students in entering will be desirable." Apparently each field of study will be considered separately.

Over and over in the institutions we visited we were told that preference was given to the best students and to the groups the Assistant Minister mentioned. For example, at the University of Moscow we were told: "Students enter here irrespective of nationality. Quotas are set for National Republics. Our admission principle is to choose only the best students. Preference is given to those who have worked 2 years and those who have served in the Army. Discrimination against any nationality is prohibited."

At Moscow University we learned from the Pro-Rector that last year about 50 percent of the students enrolled were admitted directly from general school and 50 percent after work experience. He expects the work group to be larger next year and mentioned that a quota might be set for those entering directly from general schools, possibly at 20 percent in most departments.

From 70 to 80 percent of the students in the humanities were students who entered with army or work experience; in geology, 45 percent; and in geography, 35 percent.

We asked the Assistant Minister for his opinion on the effect of the increase in polytechnical training in agriculture and industry on the standards of work in general schools. In replying, he made it clear that educators did not want to have standards lowered and that schools might have to extend the general education course to 11 or 12 years. As we visited institutions of higher education we found considerable support among professors and students for work experience before college, particularly for students entering some departments.

Apparently there is considerable movement of students from one section of the U.S.S.R. to another to attend higher institutions. We were told that about 60 nationality groups were represented at the University of Moscow. Some students in Moscow go to institutions in other cities and some from other cities attend the Universities of Moscow and Leningrad—the two that are regarded most highly. In each capital city of the various Republics, however, there is a university, and all are apparently highly regarded. Furthermore the many specialized institutes throughout the U.S.S.R. give somewhat more practical training and draw somewhat less able students than the universities. Even so, there is a great deal of competition for admission, and the quality of students is high.

We mentioned to the Assistant Minister that American professors often complained about the preparation of college freshmen and asked whether Soviet professors did. He smiled and said that professors always wanted better students, but that it was necessary to consider the capabilities of students. He then said that there had been no complaints about their ability to write and that mathematics students were always well prepared because of the keen competition to get into mathematics faculties, but that all schools did not give the same quality of training, that preparation differed in different places, and that much depended on the teachers.

And he pointed out that students from the National Republics were handicapped by not being native Russian-speaking persons. The Siberians do very well, he said, but of course only the best of them apply to the University of Moscow. He said that on the average 89 percent of the students admitted to higher institutions completed the requirements. At the University of Moscow the Pro-Rector told us that 93 percent of the students admitted to the University were graduated, that 30 percent of all students come from rural areas, and that after their early years in the University there was no difference between these students and those from urban areas.

The Assistant Minister pointed out that most students know the standards of particular universities and apply where they have some possibility of getting in. They get help from their teachers, from the institution, and from other students. Every spring each institution invites prospective students to a "day of open doors," shows them around, distributes copies of a pamphlet on the institution, and invites them to attend lectures.

Program of Study

The program of study to be given by a university department is worked out by experts and approved by a commission. The Assistant Minister said that it was impossible to supervise every lecture given, but the topics to be covered in professors' lectures were determined by scientists.

A first-year university student spends 35 hours a week in lectures, classes, laboratories, and seminars; second-year student, 32 or 33 hours; the third-year student, 30 hours; and the fourth and fifth-year students, 28 hours. Students spend about 20 hours a week in study outside of class, according to the Assistant Minister, who added that before examinations students work hard and long hours and that obviously the amount of time depended on the ability of the student.

The rate of progress of a Soviet student depends to a great extent on his own mental ability and stamina, but he cannot complete his course in less than the specified period. Through tutorial assistance, research facilities, financial support, and recognition among their fellows, promising students are given incentive to move ahead to individual research and productivity. It is at this level that talent appears to receive its full recognition in Soviet education.

University students are permitted to begin their own research work in their second or third year and are strongly encouraged to do so. As a means of encouraging them, competitions are held for the best independent work, the best students get medals, and the institutes publish the best papers.

The student in an institution of higher education knows that his stipend depends on his academic performance as well as on evident need and that job placement after graduation depends on his academic rank in his graduating class. In the large universities and institutes of high rank, the student knows that he is working under and is associated with members of one group of the intellectual, economic, and social elite of Soviet society—college professors.

The many university and institute students we met were a vital, serious, and friendly group. Many of them were from families who were illiterate before the revolution. They are very much concerned about world peace and questioned us about American intentions. Like the younger pupils they were most anxious that we carry their friendly greetings to American students and assure them that Soviet students want peace.

The students who were fortunate enough to get into Soviet institutions of higher education appeared to be there strictly for learning. They appeared to be keen and eager. Every student we met, boy and girl without exception, was looking forward to getting a job after graduation. We met no girls who were merely looking forward to getting married.

Student Support

All students in higher institutions study free of charge, but they must pay for their rooms, board, and books. However, about 80 percent of the students receive stipends from the State, as is pointed out earlier. The Ministry of Higher Education provides a number of stipends to each institution and each faculty, and the institution and the faculty award them. (For further information on student support in higher education, see ch. II, p. 14, and ch. VIII, Teacher Education, p. 84.)

In addition to State stipends there are also some personal stipends—similar to name scholarships in the United States—which carry a 50 percent higher payment.

Student Housing

Students attending college away from their homes live in hostels. At some higher institutions students eat at canteens where they can get a 3-course meal at low cost.

The University of Moscow provides in its hostels 6,000 rooms with from 2 to 4 persons to each room and in addition to living quarters the hostel contains comfortably furnished lounges—1 for every 100 students—reading rooms, study rooms, a gymnasium, and a swimming pool. The rooms we saw were well appointed, though small. At the University of Moscow we noticed that boys and girls were housed in the same hostel, on the same floor.

We looked into four rooms at the Lenin Institute hostel, and all of them were neat. One of those we saw was occupied by 5 or 6 girls; they had a radio and a record player which was playing classical music when we entered. Their room was small with space enough only for the beds and a central table, but elsewhere in the hostel there were reading and study rooms.

Instructional Staff

Faculty members in institutions of higher education are highly regarded by Soviet citizens and students, are highly paid in comparison with members of other professions, and are provided with excellent facilities.

The Ministry of Higher Education appoints rectors, but plans are now being made to have them elected for 3-year periods by the university faculties. Professors are selected by other professors. When a vacancy occurs, it is advertised, and applicants submit statements of their qualifications, their history, and copies of their publications. A committee of the faculty applied to then studies the applicant's papers and reports its findings to the Council of Scientists, an all-university body which selects, by a secret ballot, the person to be chosen. The applicant must receive a majority of the votes to be elected.

In most institutions professors are appointed for 5-year terms; the incumbent can apply again, but he must compete against the field. Some professors are paid 5,000 rubles a month if they are in the top bracket. In addition if they do some research for industry, they may earn 2,500 rubles a month more, and they receive additional pay for work on curriculum or as examiners.

Professors are expected to spend from 500 to 600 hours a year in teaching and research, or about 15 hours a week. If a faculty member does no research, he is expected to teach about 20 hours, but there are a small number of such people. If he does only research, he probably spends a good deal more time in it because of his interest.

We are told that about 32 percent of professors are Party Members.

XI. The Academy of Sciences

TO SEVERAL MEMBERS of our delegation, the most dynamic element in Soviet education and technology appeared to be the institution called "The Academy of Sciences." By sciences, Soviet educators mean all branches of knowledge—the humanities, the social sciences, and the natural sciences.

This institution, the Academy of Sciences, is the means for broad subsidization of brain power by the State on a scale beyond any promotion of basic research that we had known before. Talented persons, who have proved their worth through productive research, are virtually given an income for life and a great deal of latitude to conduct their research. The degrees of freedom doubtless vary with subject fields but there appeared to be no question of practically unlimited financial support for their research activities.

The Academy of Sciences was founded about 1725. It is similar to the French Academy, to the Royal Society in Great Britain, to the later development of the American Philosophical Society, and the Associations for the Advancement of Science in Great Britain and in the United States. This venerable and highly regarded institution has now become the powerful leading edge of the Soviet quest for supremacy in all fields of knowledge.

We had stimulating and productive meetings with members of the U.S.S.R. Academy of Sciences in Moscow and with members of academies in Kazan and in Alma-Ata, which are affiliated with the U.S.S.R. Academy, and we discussed the functions and programs of academies of sciences with educators as we visited each city on our itinerary.

The Academy of Sciences is the "scientific institution" of the Soviet Union. Its president, Alexander Nikolaevich Nesmeyanov, is for all practical purposes the U.S.S.R. Minister of Science. In consultation with other members of the Academy he decides what projects the various branches of science should work on, their mode of operation, and where they will get the money and men to do the job. At present he is pushing for accelerated progress of the chemical industry, particularly the work on synthetics, and also for a closer coordination of the Academy's research support for the new reorganization of the Councils of the National Economy.

To carry out Party and Government decisions the Academy calls on about 260,000 researchers among whom there are about 96,000 holding the scientific degree of either the Candidate of Science (Kandidat Nauk) or the Doctor of Science (Doktor Nauk). These workers, after high Party and Government officials, are among some of the highest paid persons in the Soviet Union.

The Academy's organizational structure is complex. Its basic organ of operation is the General Assembly of Academy members, which meets several times a year and at least once a year hears a detailed progress report on current research and other activities. Since the Assembly is not in continuous session, responsibility for interim activity is vested in the Academy's Presidium. Subordinated to the Presidium is the Chief Scientific Secretary's Office, which is responsible for scientific research of the Academy's Institutes and for recruitment of necessary personnel. There is an Academy in each of the 15 U.S.S.R. Republics except the RSFSR and Moldavian Republic, both of which have branch academies. The Republic Academies are subordinate to the U.S.S.R. Academy in Moscow; they direct the scientific and research activities in their own Republics with some overall supervision and coordination from Moscow.

Like many other institutions in the Soviet Union the Academy was hard hit by the war; over 600 of its scientific research institutes were destroyed. Despite its war losses it has apparently recovered, for we were told that the number of institutes had increased from 1,821 in 1940 to about 2,800 in 1958.

The Academy's role is particularly important in the training of scientific personnel. The Ministry of Higher Education gives general direction to the science and science-teaching cadres during their postgraduate period of training in the various Ministries and Departments; however, the general direction of postgraduate training in the Academy's scientific and research institutes and in the Republic Academies is the job of the Academy's Presidium. The Academy, together with the Ministry of Higher Education, formulates regulations on science training and science-teaching cadres. In 1957 the Central Committee (Party) and the Council of Ministers (Government) assigned the Academy and the Ministry of Higher Education the task of improving the postgraduate training system for scientific and science-teaching cadres as well as raising the quality of standards of the higher education institutes and scientific institutes of training.

The Academy and the Ministry of Higher Education share responsibility for filling a need for highly qualified professors or doctors of science. During the early postwar years when there was an acute lack of specialists, particularly of professors at higher education institutions and of doctors of science in fields vital to the national economy, the Central Committee of the Party and the Council of Ministers called on the Academy and the Ministry of Higher Education to carry out their policy decisions. As a result, the Academy and other Ministries and Departments "commandeered" a large number of scientific workers to complete their work for their doctorates.

The Academy's international activities are extensive and important. In 1956 it participated as a member of 42 international scientific associations. In the same year Soviet scientists participated in 154 international scientific congresses, conferences, and assemblies; and more than 800 foreign scientists visited the Soviet Union. Through a series of intricate agreements with China, the Academy has participated in working out a well-organized plan for an exchange of scientists and scientific documents. In June 1958 the Soviet Union had just concluded one of these important agreements with China. The Protocol signed July 4, 1958, provides "for a mutual exchange of scientific and technical documentation materials and a mutual commandeering of specialists for studying production experience and achievements in science and technology." The Soviet Union has also concluded such agreements with practically all of the East European satellite countries. It is making a systematic effort to coordinate the work of the research institutes of the Chinese Academy of Science and that of the Academies in other countries with the research being done currently in the Soviet Union.

It was of special interest to us to note the virtually unlimited support for basic research that the Soviet Union is providing through the U.S.S.R. Academy of Sciences and the Republic academies. Apparently the Soviet Government considers basic research to be the most practical investment it can make. This attitude, along with the high prestige accorded brainpower in the Soviet Union, makes the Academy of Sciences the most powerful scientific institution that many of us have ever known.

XII. Conclusion

IN RETROSPECT, the strongest impressions we retain of our visit to the schools of the U.S.S.R. include the zeal of its people for education and the rapidly increasing degree of educational opportunity.

We have avoided comparisons between our educational system and that of the Soviet Union because, as we have stated, the objectives of education in the two countries are so different as to make comparisons misleading.

The Soviets educate their citizens to a pattern shaped to serve the needs of the State whether or not those needs coincide with those of the individual. Our system is designed to give young people the know-how to help them to excel in their best fields of endeavor as *free individuals*. We look for the creative spark in every child and try to teach our youngsters how to think independently, and how to work to develop their talents for a useful happy living in a way of life which they may choose for themselves.

Although we traveled widely and saw a great many schools, obviously there was much that we did not see and our time was limited. It should be noted, too, that education in the U.S.S.R. is changing rapidly. Some of what we saw and reported may no longer be current practice. It is valuable now chiefly as a backdrop of history against which continuing changes will undoubtedly take place. Therefore, we hope that educators in the United States will continue to study education in the U.S.S.R. so that their findings can be coordinated and evaluated and be made widely available.

Some of the areas of Soviet education about which we particularly need more information include the content and procedures in university courses, especially in science; vocational schools other than technicums; the schools for the exceptional children, including the deaf, the crippled, and the mentally retarded; 4-year and 7-year rural schools; gymnastic schools; military schools; party schools; experimental English schools; adult education courses; Pioneer camps, inservice teacher education programs; parent relationship to schools; the patterns of choices of circles by individual young people; and the facts of history which are taught, particularly in the history of other countries.

Aside from the broad impressions we gained, we were favorably impressed by the following specific aspects of Soviet education:

★The growth and development, the management and equipment, of nurseries and kindergarten establishments.

★The clean, neat boarding schools and the industry of pupils and teachers.

★The favorable teacher load, class size, and the supporting personnel such as laboratory assistants and curriculum aides.

★Emphasis on productive work and respect for manual labor.

★Part-time schooling and correspondence schooling.

★Dignity and respect between boys and girls.

★Close cooperation of industry with the schools.

★The quality and adequacy of laboratory equipment and teaching aids, many of which were made by pupils and/or teachers.

★The heavy emphasis and effectiveness of foreign language instruction at the pedagogical institutes and universities.

★The motivation for individual learning and enrichment provided by the work of the Pioneer Circles, which keep boys and girls constructively engaged outside of the regular classroom hours.

★The close cooperation of schools with the home.

★Parent education courses and frequent parent-teacher conferences.

★The emphasis on physical education and health; the provisions for medical and nursing services in the schools.

★The education provided for the blind.

★The close articulation between the Pioneer circles and the schools and between school and industry.

★The provision of time in the program for school excursions.

★The program of summer camps provided for the Young Pioneers.

On the other hand, we question these specific aspects of Soviet education:

★The adequacy of conversational practice in foreign languages below the university level, in terms of the number of years devoted to such study.

★The uniformity of the curriculums in the general education or 10-year schools.

★The requirement that all pupils wear uniforms.

★The seeming lack of emphasis on the humanities.

- ★The paucity of artistic training within the regular school day (except in the special schools of music, ballet, and art).
- ★The limited nature of homemaking programs.
- ★The in-school provision for the gifted as contrasted with the great emphasis on pushing weaker pupils through the uniform curriculum.
- ★The use of examinations, aside from motivating students and as a learning experience in work under pressure.
- ★The lack of instruction on other economic systems and societies.

These are highlights of our impressions from a brief contact with Soviet schools. We think that such contacts should be continued and expanded. We noted, for instance, with regret the absence of letters and exhibits from the U.S. among such displays in the U.S.S.R. schools and in the Pioneer Palaces. We hope that the cultural exchanges now underway will encourage an exchange of materials as well as people between the two countries.

We cannot afford to be apathetic about educational developments in the U.S.S.R. Clearly the Soviet Union is bent on overtaking and surpassing us as a world power, and it proposes to use education as one of the primary means of obtaining this objective.

Since the educational system of any people or country is one of the most brilliantly illuminating facets of a culture, we feel that within the scope of our observations we have gained some insight into the people of the U.S.S.R. through studying their educational system.

We want to emphasize that what we saw in the U.S.S.R. only served to renew our confidence in our better schools. But, at the same time, what we saw increased our concern for our poorer schools, suffering from neglect.

In the light of all we saw, we cannot stress too firmly our conviction that our Nation must never forget nor underestimate the power and potential of education.

Appendix A

Study Plans for Pedagogical Institutes

Table I.—Foreign Languages

5-year program (pedagogical institutes)

Number of courses	Subject	Total semester hours	Total clock hours
	Required		
1	History of the CPSU	14	224
2	Political economy	10	140
3	Dialectical and historical materialism	13	140
4	Psychology	5	84
5	Pedagogy	7	120
6	History of pedagogy	5	72
7	School hygiene	2	36
8	Introduction to linguistics	4	80
9	Latin	3	60
10	Methods of teaching foreign languages	8	120
11	Phonetics of foreign language	26	438
12	Grammar of foreign language	34	578
13	Practical training in spoken (foreign) language	58	854
14	Analysis of texts and written practice	30	476
15	Translation	6	70
16	Lexicology	4	64
17	History of language	5	72
18	Literature in the foreign language studied	6	96
19	Second foreign language	59	800
20	Recent history of countries of languages studied	3	36
21	Special training	3	48
22	Physical education	6	140
23	Practical training in audiovisual techniques	10	76
	Grand total required	321	4, 824
	Optional examples		
1	Practical training in extracurricular and extraschool activities		100
2	History of the country of language studied		60
3	History of the culture of the country of the language studied		40
4	Geography of the country of the language studied		40

Table I.—Foreign Languages—Continued

Number of courses	Subject	Total semester hours	Total clock hours
	Optional examples—Continued		
5	Russian language		120
6	Literary style		40
7	Special course in philology		120
8	Special seminar in philology		120
9	Foreign literature		40
10	Improving sports skills		420
11	Logic		70
12	Choral singing		250
13	Individual instruction in playing musical instruments		250
	Teaching practice required		
1	Pioneer camps	3 weeks	
2	Schools	16 weeks	

Table II.—Physics and the Fundamentals of Production

5-year program (pedagogical institutes)

Number of courses	Subject	Total semester hours	Total clock hours
	Required		
1	History of the CPSU	14	224
2	Political economy	10	140
3	Dialectical and historical materialism	13	140
4	Psychology	5	84
5	School hygiene	1	36
6	Pedagogy	7	120
7	History of pedagogy	5	72
8	Foreign language	8	140
9	Physical education	8	140
10	Analytic geometry	9	158
11	Mathematical analysis	23	410
12	Methods of mathematical physics	4	76
13	Mechanical drawing	5	86
14	General physics	36	636
15	Theoretical physics	29	334
16	Theoretical mechanics	8	128

Table II.—Physics and Fundamental Production—Continued

Number of courses	Subject	Total semester hours	Total clock hours
	Required—Continued		
17	Special practical training in physics	12	136
18	Special course in physics (elective)	6	54
19	Astronomy w. methods of teaching	10	160
20	Methods of teaching physics	17	210
21	Methods of teaching courses on the bases of production	5	70
22	Educational movies	3	48
23	Technology of metals and materials with practical training in school workshops	17	310
24	Technical mechanics	6	86
25	Machine technology with practical training in autotracter technology	17	190
26	Electrical technology	7	114
27	Radio technology	9	120
28	Pedagogical practice in extracurricular activities	4	60
29	Special training	3	48
	Grand total required	301	4, 530
	Optional (examples)		
1	Practical training in extracurricular and extraschool activities		100
2	Improving driving skills (automobile or tractor)		80
3	Nuclear physics		40
4	Physics of semi-conductors and dielectrics		40
5	Physics of electronic phenomena		40
6	Special course in optics		40
7	Hydroaerodynamics		40
8	Geophysics		40
9	History of physics		
10	Special topics in the methodology of physics		40
11	Selected chapters of general chemistry		80
12	Improving sports skills		420
13	Foreign language		140
14	Choral singing		250
15	Individual instruction in playing musical instruments		250
	Teaching practice required		
1	Schools	16 weeks	
2	Industrial inservice training in repair workshops, factories and electric plants, and at machine-tractor stations	7 weeks	

Table III.—Biology, Chemistry, and the Fundamentals of Agriculture

5-year program (pedagogical institutes)

Number of courses	Subject	Total semester hours	Total clock hours
	Required		
1	History of the CPSU	15	224
2	Political economy	10	140
3	Dialectical and historical materialism	14	140
4	Psychology	6	84
5	Pedagogy	8	120
6	History of pedagogy	5	72
7	School hygiene	2	36
8	Inorganic chemistry	16	234
9	Analytic chemistry	10	150
10	Organic and biochemistry	12	180
11	Foundations of physical and colloidal chemistry	10	142
12	Fundamentals of chemical technology	10	88
13	Botany	18	270
14	Physiology of plants	10	140
15	Bases of agriculture	16	220
16	Mechanization of agriculture	9	120
17	Zoology	18	270
18	Histology w. embryology	4	72
19	Human anatomy	5	90
20	Physiology of man and animals	18	180
21	Darwinism	6	70
22	Geology	10	160
23	Methods of teaching chemistry	14	156
24	Methods of teaching natural science and fundamentals of agriculture	15	168
25	Special practical training (elective)	12	112
26	Special course (elective)	6	48
27	Foreign language	8	140
28	Physical education	8	140
29	Special training	3	48
30	Pedagogical practice in extracurricular activities	4	60
31	Educational movies	2	36
	Grand total required	304	4, 110

Table III.—Biology, Chemistry, and the Fundamentals of Agriculture—Continued

Number of courses	Subject	Total semester hours	Total clock hours
	Optional (examples)		
1	Practical training in extracurricular and extraschool activities		100
2	Geography of plantlife with fundamentals of ecology		40
3	Geography of animal life with fundamentals of ecology		40
4	Genetics and breeding of agricultural animals and plants		40
5	Agricultural entomology		40
6	Agricultural microbiology		40
7	Apiculture		40
8	Mineral resources		40
9	Chemistry of complex compounds		30
10	Selected chapters in the technology of inorganic substances		30
11	Practical training in construction of visual aids		60
12	Improving sports skills		420
13	Foreign language (in years III and IV)		140
14	Choral singing		250
15	Individual instruction in playing musical instruments		250
	Teaching practice required		
1	Schools	16 weeks	
2	Field-work	19 weeks	
3	Working experience with the bases of agriculture and methods of teaching natural science and the fundamentals of agriculture	8 weeks	
4	Workshop experience in chemical technology	2 weeks	

Table IV.—Geography and Biology

5-year program (pedagogical institutes)

Number of courses	Subject	Total semester hours	Total clock hours
	Required		
1	History of the CPSU	14	224
2	Political economy	9	140
3	Dialectical and historical materialism	13	140
4	Psychology	5	84
5	Pedagogy	8	120
6	History of pedagogy	5	72
7	School hygiene	1	36
8	Fundamentals of topography and cartography	9	136
9	Fundamentals of general earth science	12	204
10	Physical geography of the U.S.S.R	15	220
11	Physical geography of the parts of the world	12	198
12	Economical geography of the U.S.S.R	18	216
13	Economical and political geography of foreign countries	18	200
14	Practical training in the study of regions	7	64
15	Methods of teaching geography	8	104
16	Chemistry	11	180
17	Botany	17	270
18	Zoology	17	270
19	Physiology of plants	7	116
20	Physiology of man and animals	15	180
21	Human anatomy	4	76
22	Darwinism	7	70
23	Methods of teaching natural science	8	104
24	Fundamentals of agriculture	7	116
25	Geology	10	170
26	Elements of soil culture	6	78
27	Geography of animal life	2	38
28	Geography of plant life	2	38
29	Educational movies	3	36
30	Astronomy	3	56
31	Special course in geography or biology (elective)	4	40
32	Special practical training and special seminars in geography or biology (elective)	10	100
33	Pedagogical practice in extracurricular and extra-school activities	4	60
34	Foreign language	8	140
35	Physical education	6	140
36	Special training	3	48
	Grand total required	308	4,484

Table IV.—Geography and Biology—Continued

Number of courses	Subject	Total semester hours	Total clock hours
	Optional (examples)		
1	Practical training in extracurricular and extraschool activities		100
2	History of geographical discoveries		40
3	Geography of population		40
4	Economic cartography		38
5	Methods of geographical field observations		40
6	History of the national economy of the U.S.S.R		80
7	Ecology of plants		40
8	Ecology of animals		40
9	Agriculture		40
10	Sketching		40
11	Construction of visual aids		60
12	Practical study of agricultural machinery		60
13	Improving sports skills		420
14	Foreign language (in years III and IV)		140
15	Choral singing		250
16	Individual instruction in playing musical instruments		250
	Practice teaching required		
1	Schools	16 weeks	
2	Summer field work	27 weeks	

Table V.—Physical Education

4-year program (pedagogical institutes)

Number of courses	Subject	Total semester hours	Total clock hours
	Required		
1	History of the CPSU	14	224
2	Political economy	11	140
3	Dialectical and historical materialism	13	140
4	Psychology (including psychology of sports)	8	100
5	Pedagogy	8	120
6	History of pedagogy	6	72
7	Foreign language	8	140
8	Chemistry	7	104
9	Human anatomy	12	180
10	Human physiology	16	256
11	Methods of teaching human anatomy and physiology	4	54
12	General biology with fundamentals of Darwinism	7	112
13	General hygiene and physical exercises	10	124
14	Physical therapy, medical supervision, athletic massage	15	150
15	Organization and history of physical culture	9	96
16	Theory and methods of physical education	11	142
17	Gymnastics (fundamental, athletic, and acrobatic) and teaching methods	32	400
18	Light athletics and teaching methods		
	a. period of theoretical instruction	13	248
	b. period of field activities	8 weeks	(80)
19	Sports and teaching methods		
	a. period of theoretical instruction	20	274
	b. period of field activities	8 weeks	(56)
20	Skiing		
	a. period of theoretical instruction	2	38
	b. period of field activities	6 weeks	(204)
21	Ice-skating and teaching methods	4	60
22	Active games and teaching methods		
	a. period of theoretical instruction	4	60
	b. period of field activities	4 weeks	(16)
23	Swimming and methods of teaching		
	a. period of theoretical instruction	6	82
	b. period of field activities	8 weeks	(88)
24	Musical and rhythmic training	6	82
25	Tourism		
	a. period of field activities	8 weeks	(120)
	b. tourist outing		(80)
26	Special training	3	48
	Grand total required	249	3, 446
			(564)

Table V.—Physical Education—Continued

Number of courses	Subject	Total semester hours	Total clock hours
	Optional (examples)		
1	Practical training in improving sports skills (for first-class athletes and masters of sports)	48 (72)	600 (900)
2	Automobile racing		100
3	Figure skating		70
4	Rowing		40
5	Bicycle racing		60
6	Shooting		60
7	Fencing		70
8	Group folk and ballroom dancing		100
9	Athletic equipment		30
10	Cinema—photography		80
11	Choral singing		250
12	Individual instruction in playing musical instruments		250
	Practice teaching required		
1	Pedagogical practice in physical education with exemption from studies in third year	6 weeks	
2	Pedagogical practice in school in physical education, anatomy, and physiology, with exemption from studies in third year	8 weeks	
3	Winter study camp (zimnii uchebnolagernyi sbor)	204 6 weeks	204
4	Summer study camp (letnii uchebnolagernyi sbor)	280 8 weeks	280
5	Summer tourist excursion (letnii turistskii pokhod)	10 days	80
6	In Pioneer camps	3 weeks	

Appendix B

Soviet Educational Reorganizations for 1959–1963

By **William K. Medlin***

FOLLOWING SEVERAL YEARS of gradual changes in Soviet school programs toward making education more practical, and after many months of active discussion in the Soviet press and public institutions, the Soviet legislature (Supreme Soviet) enacted on December 24, 1958, a new fundamental law on education. This law, if fully implemented, will substantially recast the educational system in the U.S.S.R. The measure is entitled, "Law on Strengthening the Ties of School with Life and on the Further Development of the System of Public Education in the U.S.S.R.," and it is binding on all 15 constituent Soviet Republics. The law contains 4 major sections, each dealing with a major school system (primary-secondary, vocational-technical, secondary special, and higher schools), and has a total of 42 articles.

The immediate background of the reforms which have been passed by the legislature can be traced to the XIX Congress of the Communist Party of the Soviet Union (CPSU), held in October 1952, when high officials in the Party and Government called for more practical training of Soviet youth along polytechnical lines. In later official statements and writings, in proceedings at the XX Party Congress in February 1956, in a major address at the XIII Congress of the Young Communist League (Komsomol) in April 1958, and again in a strong recommendation by Premier Khrushchev in September 1958, ever more radical changes were demanded in the education of Soviet youth. The U.S. team of educators to the U.S.S.R. asked their Soviet hosts in May 1958 about the reforms then being contemplated, and they received some broad outlines of what was to come. Further information was supplied by the official team of Soviet educators who arrived in the United States in November 1958. A definitive statement on recommendations was finally issued on November 16, 1958, jointly by the CPSU Central Committee and the U.S.S.R. Council of Ministers. These recommendations prepared the way for basic legislation in December.

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The abundant literature and information given out so far on the question of school reforms provide some explanation and rationale for the impending changes. For some years Soviet schools have not been producing sufficient numbers of young people with particular vocational, technical, and other labor skills. With enrollments in the 3 senior grades (8–10) of the 10-year school mounting to 5–6 million and annual graduations ranging from 1 to 1½ million, the 10-year schools have been training too many youngsters in the academic, pre-university line and too few in the vocational and industrially oriented lines of education. This situation has had important economic and social effects which the Government has now determined to eliminate. Among these effects has been a growing disinclination of secondary school students and graduates to engage in physical labor.[1] In his public statement to the Presidium of the CPSU Central Committee in September 1958, Mr. Khrushchev said: "A portion of those who finish the 10-year school unwillingly go to work in factories, plants, and collective and State farms, and some even consider that it is an insult to them." Young people ought "to know how to hold a hammer and not to confuse the handle with the claws," he remarked at the April Komsomol Congress. In addition to singling out a negative attitude toward physical labor, the Soviet leader pointed to social inequities in higher school admissions procedures. He said that in Moscow institutions of higher learning, "30–40 percent of the students are children of workers and peasants. The rest of the students are children of employees, the intelligentsia."

The Government has emphasized that the economic and cultural development of the country requires ever greater numbers of young people trained not only in general educational subjects but also in the techniques and vocations of a changing industrial society. "Life places new tasks before the school. Our general educational and higher schools are behind the needs of building communism; they have serious shortcomings. Among them the major one is an acknowledged gap between instruction and life." There are serious dislocations in the vocational, technical, and higher school systems which, according to official statements, are not related closely enough to the needs of specific industrial and agricultural installations in the various areas of the country. The practical teaching of subjects, methods of effectively bringing functional concepts and reality as well as theory into courses of study at the higher education level, and problems of moral education are other factors calling for organizational and curricular reforms. Although Soviet discussions have not mentioned the manpower problem in connection with the reforms, it is possible that an imminent labor shortage due primarily to low birth rates during and after World War II is one consideration influencing the Government's thinking.

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[1] See U.S. Department of Health, Education, and Welfare, Office of Education. *Education in the U.S.S.R.* (Washington: GPO, 1957) p. 138.

Soviet educators insist on the educative value of physical labor. It can be very effectively combined with mental labor, they state, and this combination not only produces better educational results but also has valuable social and moral features. They maintain that in some other modern societies the separation of physical and mental labor in the school experiences of young people leads to socially unhealthful conditions and poorly trained individuals. According to statements of the Soviet Government, some signs of these effects on youth in the U.S.S.R. are cause for reforms. The Russian Academy of Pedagogical Sciences and various other educational agencies have, during recent years, conducted experiments with several combinations of work and classroom study in school programs. Findings will now apparently be put into use on a broad scale in a variety of educational institutions.

The new Soviet law outlines in broad fashion the essential features of the new school reforms that will be introduced, but it does not delineate very specifically or precisely the character and content of future studies. These details are left to educational administrations in the 15 Soviet Republics and in the Soviet Federal Government. Some further indication of the different kinds of curriculums to be offered may be found, however, in the November recommendations (theses) put forward by the CPSU Central Committee and the U.S.S.R. Council of Ministers. The new December law states that the Supreme Soviet "approves the theses . . . , which have received general support in the course of national consideration [of them]." These recommendations will provide us some additional insights into the major changes in Soviet schools. A brief analysis of these changes, by level and type of education, follows.

Primary-Secondary Education

A compulsory, universal, and generally unified 8-year school is to be the basic educational program throughout the Soviet Union. The school's curriculum will be similar to that now used in the 7-year school, but with a decidedly stronger industrial-arts-vocational orientation. It will be, in official terms, "an incomplete secondary, general educational, labor, polytechnical school, which must give to pupils the simple fundamentals of general education and polytechnical knowledge, teach love for labor and preparation for socially useful activity, and educate children along moral, physical, and esthetic lines." Boys will receive better preparation in knowledge and skills useful in industry or agriculture, while girls will receive training in domestic skills.

After graduation from the 8-year school, all youths will be expected to engage in some form of productive labor. If the young person so chooses, he or she may continue secondary education on a part-time basis. The provisions for such education as stated by law are described below:

(1) *Schools for young workers and rural (agricultural) youth.*—These are 3-year evening or seasonal schools of general education whereby youths employed in industry or agriculture may complete a secondary school and at the same time improve their general vocational qualifications. Provisions will be made by law to shorten the work day or the work week so as to permit students to study successfully.

(2) *Secondary schools of general, labor, and polytechnical education.*—These schools will offer training in production work as well as education in academic and practical subjects. The program is 3 years, on completion of which the student will have a general education and also "vocational training for a job" in industrial, commercial, agricultural, or cultural lines. A variety of vocationally oriented programs are intended, depending on local facilities and needs. A variety of means and facilities will provide opportunities for youths to get practical training and experience: nearby industrial shops, student farm brigades, school shops and facilities for experimental work, inter-school shops, etc. The law does not specify whether schooling will be part-time, full-time, day, or evening programs.

(3) *Technicums and other secondary special schools.*—These schools will provide both secondary education and specialized education. In the past, this education has been of a semi-professional nature.

These three types of schools are the ones specifically provided for by the law. The November recommendations of the Party and Government point to the desirability of establishing some special secondary schools for artistically talented and academically gifted children, but this provision has not been put into law.

It is not clear from the present law whether or not the third category of schools will include such special schools. Article 7 of the law requires that, "in each union republic, where necessity requires it, there must be retained during the transitional period a certain number of presently operating secondary schools." These schools will supply students qualified for university-level institutions. Article 7 further stipulates that, "It is recognized as necessary to reorganize the existing 10-year schools (their senior classes) into various types of city and rural general educational schools." It seems probable that the provisions of Article 7 will allow educational authorities to organize new special schools as well as to retain basically academic 10- or 11-year schools for talented youth who will make up at least some portion of the college enrollments in the years ahead.

The idea of special schools has both strong proponents and opponents among Soviet educators. Careful observation of future developments in this field will reveal the direction which they take. The first school changes will begin with the 1959–60 school year, and then will be carried to completion in 3–5 years. The Government's November recommendations and the proposed 7-year plan (1959–65) both call for rapid development of an 11-year boarding school, academically structured along lines of the general-labor-polytechnical secondary school. It will be the task of each Union Republic government legally to provide for and to expand this type of boarding school to reach a set goal of 2½ million pupils by 1965.

Vocational and Semiprofessional Schools

(1) *Vocational schools.*—The present network of vocational schools operated by the Main Administration of Labor Reserves of the U.S.S.R and by other ministerial agencies, both Federal and Republic, is to be expanded into a better system of vocational-technical schools. Based on the 8-year school, these schools will offer 1- to 3-year programs for factory training (incorporating programs of the FZO-FZU schools), special trades, railroading, mining, construction work, agricultural mechanics, and so forth. They will be operated on both day and evening basis, and length of study is to vary: in municipal areas, from 1 to 3 years, and in rural areas, from 1 to 2 years. The U.S.S.R. Council of Ministers will determine the internal organizations of these various schools.

(2) *Semi-professional schools* (secondary special education).—With the aim of improving the training of semi-professional workers, secondary special schools will be required to give better theoretical and practical instruction. Work installations and shops must be set up at the technicums where actual industrial production and agricultural work by students will be carried on. Evening and correspondence education will be expanded, and it will include new extension divisions to be set up at specialized higher institutions where the teaching staff and other facilities for instruction are available.

The present law stipulates that completion of both the 8-year school and a secondary education will serve as bases for taking semi-professional training. For a student to complete his preparation in a *particular* specialty, however, he must take his training after having completed a secondary (11-year) education. The organization of the various semi-professional schools is to be determined by the U.S.S.R. Council of Ministers.

Higher Education

Higher education will be changed in two particular ways: through a substantial increase in the student's practical and work experience allied to a major specialty; and through a much greater use of evening and correspondence forms of education. These changes are reflected in the organizational arrangements of higher schools which will be implemented in the next few years.

(1) *Technical and engineering institutes.*—The majority of students will combine education with work in industry or agriculture by taking correspondence and evening classes during the first 2 years. Students enrolled in the more theoretical and complicated disciplines, where much laboratory time is also required, will not be required to work in industry during the first 2 to 3 years of their program. Thereafter, however, these students will spend a year working in an industrial installation, laboratory, or bureau. "Factory-technical higher institutions" (*zavody-vtuzy*) are to be created, and industrial enterprises and workshops will be established at higher schools, enabling students to engage in productive work. As such establishments are provided, it seems possible that a student's required work experience could be had adjacent to the institution in which he plans to carry on his academic education.

(2) *Agricultural institutes.*—Education and training in the agricultural sciences will be expanded and carried out in institutes having ancillary collective or state farms as bases of training and work experience. Students will participate in farm operations under this system, on a seasonal basis. The law does not indicate that there will be a definite break in the student's study program.

(3) *Universities.*—Students enrolled in universities will have their studies so scheduled so as to permit them to engage in production or other work experiences sufficient to train them in the special processes of their fields of study. Students in the social and humanistic disciplines must have "definite experience in socially useful work."

(4) *Medical institutes.*—Persons with practical experience at semi-professional levels in the medical or pharmaceutical field will receive higher education in that line. Education must be combined with "uninterrupted practice in medical-prophylactic and sanitary-hygienic institutions." Persons who have a secondary (semi-professional) medical education will receive higher education "without a break in employment."

(5) *Teacher education programs.*—Efforts will be intensified to provide all teachers, including elementary school teachers, with a higher education. Their education must include more productive work and teaching practice as part of their general preparation.

(6) *Schools and institutes in the arts.*—Both higher and special secondary education in music, painting, theater, and other arts must be expanded

further through extension types of education, without interrupting the student's regular employment.

(7) *Research institutions.*—In order to raise the level of theoretical work in higher education, and to increase its utility for the national economy, scientific-research institutes must be created at the universities and other higher institutions and foundations.

In the general interest of raising the educational-technical competences of specialists throughout the country, it will be up to the regional economic councils, the various ministries, and other economic agencies to provide salaried jobs and duties, the conditions for productive training, and living facilities for those students who engage in work experience while pursuing their educational programs.

The U.S.S.R. Council of Ministers is taking measures to define the organization and regulations of the higher schools system throughout the country.

Observations on the Soviet Education Reforms

The provisions of the new basic law on education leave obscure many details and aspects related to implementing its measures. These undefined features are presumably to be worked out by the responsible educational agencies of the Federal and Republic Governments during the months and years between December 1958 and the year 1963, the outside date set by the law for its implementation. There are nonetheless certain observations which we can make in order for us to bring some of the coming changes into better focus, to detect those areas of the reform that must receive further elaboration and possible changes, and to draw some tentative conclusions about the overall character of these important school changes in the USSR.

The 8-year compulsory schooling represents an increase of 1 year over the 7-year requirement that has been in effect heretofore, and it will therefore constitute a general increase of the national level of general mass education. In terms of educational policy, however, the new law marks a retreat from the position taken at the XX CPSU Congress in 1956 on general education goals. The "Directives" of that Congress instructed the responsible authorities "to effectuate in the main general secondary education in cities and rural areas through teaching children and youth in secondary general educational schools (10-year schools) and in secondary special educational institutions." This goal has been abandoned for a shorter term of required education, with provisions that youth may complete secondary schooling on a voluntary basis through a variety of special programs. The 8-year school thus takes on the character of terminal education, following which youths are expected to work in the national economy. The impending curricular and methodological changes for the 8-year program, which have been suggested in Soviet educational literature, point toward a much stronger industrial arts-vocational orientation than has been the case in the 7-year program. In urban areas, education would prepare youngsters in broad vocational fields related to local industrial features; in the countryside, the vocational emphasis would be on agricultural knowledge and skills.

Measures on secondary education are somewhat flexible, more so than the earlier criticisms of the 10-year school seemed to presage. This flexibility may be particularly significant for the education of intellectually qualified youngsters in the academic, pre-college subjects, since the new law authorizes both the retention of sufficient numbers of secondary schools to maintain the flow of students into colleges, and the creation of new secondary special schools. Future legislation for and developments in these schools will be of primary importance for the future of Soviet education as a whole.

While the combinations at the secondary level of general education, instruction in industrial-agricultural subjects, and actual work experience aim to sharpen the economic usefulness of Soviet youth and to improve their cultural and social preparation for industrial living, the new program would seem to complicate the matter of maintaining standards in academic subjects. This complication appears more certain in view of the fact that the new law does not specify the types of curricula that will be applied in the various secondary schools, the criteria for enrolling in these schools, and the qualifications for graduation from them. With respect to the present 10-year school, all of these features are clear and have been studied.

These questions apply equally to the coming structure of higher education. Certainly the law's provision that courses in complex, theoretical fields given during the first 2–3 years in universities and colleges be taken by students without interruption from work requirements will mean that students entering such programs will have to have adequate academic preparation. Again, it seems that the law's flexibility will allow arranging special programs for this need, and we can expect that appropriate legislative-administrative actions will be forthcoming.

The lack of any reference in the law to qualifying certificates, principles of examination procedures, and identification of the talented or gifted shows that these areas too will have to be defined by federal and republic authorities. The exercise of proper selection is vitally important to the highly planned Soviet society, and we can expect that selecting procedures will be operating to direct young people's educational career at ages 15–16 and again at ages 18–19. The law does assign one activity in this field to political and social organizations. Article 28 specifies: "Higher educational establishments will admit on the basis of references given by Party, Trade Union, Komsomol, and other social organizations, by directors of industrial enterprises and collective farm boards. . . . . In enrolling in higher educational institutions preference will be given to persons who have experience in practical work."

No reference appears in the new law to radical changes in education and training at the universities and teachers institutes. It seems likely that the major reforms in elementary-secondary education will require important curricular adjustments in many higher programs in those institutions. The law makes vague references to the "combining . . . of instruction with work," to "experience in socially useful work," and to "production and teaching practice" without being so specific in such matters as it is in other higher level programs.

Education in vocational, technical, and semi-professional lines is subject to little radical change, and the terminal and vocational character of the new 8-year school stands to favor the recruiting possibilities for schools of these types.

While it is impossible to reach conclusions on the effects of educational legislation prior to its implementation, educators in the United States may want to watch for the directions and developments in Soviet education during the coming years. In effect, the December 1958 law on education calls for a substantial dismantling of the general educational structure which the Soviet Government has been building for the past 25 years, and more rapidly so since 1950. In terms of educational policy and goals, the new measures compare in significance to the reforms put through in 1931–32. They are manifestly not designed at this stage in their development to provide a general secondary education, in the sense that the former program did, to all eligible Soviet youths.

Our analysis has pointed out both the main features in the law and the gaps or other measures that educational authorities must yet deal with. We may well raise certain questions about the future of their program. Will the authorities be required, because of economic, political, social, or other considerations, seriously to disrupt the training of specialists, scientists, teachers, and other persons in the effort to implement the new secondary school programs? Since such a possibility does exist, according to the law's actual provisions, there follows the question as to what effects such a development would have on Soviet educational standards as we now know them.

After the reform measures take effect, it will be well to see the results of the new Soviet education on technical and scientific competencies of Soviet society. Should there be no serious disruption in the university level programs or in the selectivity of qualified youth for higher education and training, how would the system of rigid priorities as well as of selective procedures tend to shape social forms, especially among scientific, political, and cultural milieux? If Soviet society in the next 3-5 years enters into an intensive "tooling-up" period, would the increased technical and scientific competencies that might ensue therefrom have implications for education in the United States? Certainly the course of the Soviet educational reforms, and particularly developments in certain fields—such as education by correspondence and through split-session programs—should receive deserved attention by competent observers in the years ahead. Experiences of recent years instruct us to remain alert to and informed about educational developments abroad.

PS—43—59

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